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This study involving 207 adult city-core illiterates from Buffalo and Niagara Falls, New York, reading below third grade level, examined (a) educational characteristics and abilities of adult illiterates important to the improvement of reading materials and programs; (b) a study of the use of i.t.a. with adult-centered materials paced to adult learning rates and providing training for teachers; and (c) identification of variables predictive of reading gain. Standardized tests and tests of potential which were used showed the subjects lacing a number of skills helpful to efficient and effective test taking. They usually had a low level of general information, as well as low skills level. Visual acuity was often inadequate. Gains by the experimental group were not significantly greater than those of the control group; however, the child-oriented standardized testing instruments were considered inadequate. A relatively higher level of communication in the background and reading oriented present family situations were the most valuable predictive variables. Recommendations are included concerning combination research programs, linguistic analysis, recruitment, adult materials, teaching training, readability formula for adults, a materials study, methodology, and testing. (ly)

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State University of New York at Buffalo

Buffalo, New York

October, 1968

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TABLE OF CONTENTS

Page

ACKNOWLEDGEMENTS ii

TABLE OF CONTENTS iii

TABLE OF TABLES vii

I. Problem and Objectives 1

- Background of the Study 1
- Description of the Study 3
- Research Questions 4
- Definition of Terms 4
- General Design of the Study 5
- Limitations 7

II. Survey of Professional Literature and Research 9

- Characteristics of the Adult City-core Illiterate 9
  - Personal 9
  - Family 11
  - Social 13
- Reading Gain and Various Measures 17
- Reading Gain and Various Factors 18
  - Adult Interests & Individualized Pacing 19
  - i. t. a. 23
  - Pre-service and In-service Training 28

III. Methods and Procedures 30

- Introduction 30
  - Population 30
  - Sample 31
- Study of the Common Characteristics of Adult City-core Illiterates 31
  - Experimental Population 31
    - Testing for Intelligence and Potential 31
    - Visual Testing 34
    - Achievement Testing 34
    - Collection of the Data 34
  - Control Population 36
- Methodological Study 37
  - Purpose 37
  - Sample 37
  - Teaching Medium - i. t. a. 38
  - Adult-centered Materials 39
  - Pacing 39
  - Teacher-training and Consultation 39
  - Testing 39
  - Limitations 39
  - Data Analysis 40
  - Materials Production 40
- Study of Predictive Variables 40

IV. Findings and Analyses 42

Study of the Common Characteristics of Adult City-core Illiterates 42
    Experience Inventory--Experimental Population 42
        General Identification of Subjects 42
        Birthplace of Sample 43
        Childhood Reading Environment 44
        Subject's Judgment as to His Chief Cause of Reading Difficulty 46
        Present Reading Environment 47
        Why Subjects Wanted to Learn to Read 49
        Parents' Occupation 50
        Jobs Held by Subjects 50
        Possessions, Functional Knowledges, and General Knowledges 51
        Reading Interests 56
        Summary 61
    Experience Inventory--Control Population 62
    Wechsler Adult Intelligence Scale 68
    Leiter Adult Intelligence Scale 69
    Davis-Eells Games 71
    Telebinocular 72
    Stanford Achievement Test--Word Reading and Paragraph Meaning Subtests 73
Methodological Study 74
    Measurement of Gain 74
    Limitations 75
    Subjective Findings Related to the Four Variables 76
        i. t. a. 76
        Adult Materials 76
        Pacing and Learning Rate 76
        Teacher Training 76
Study of Predictive Variables 77
    Teacher Estimation Correlations 80
    Limitations 81
    Regression Analysis 81
        Description of Regression Variables 81

V. Findings, Recommendations, and Summary 86

Findings: Characteristics of ACCI 86
    Experience Inventory 86
        Background 86
        Possessions 86
        General Knowledges 87
        Book Titles 88
    WAIS, LAIS, and DEG 88
    Criterion Measures 89
Findings: Methodological Study 90
    Initial Teaching Alphabet 90
    Adult Materials 91
    Pacing and Learning Rate 91
    Teacher Training 91

Student Reactions 92
Testing 93
Special Problems 94
Findings: Study of Predictive Variables 94
Experience Inventory 95
WAIS, LAIS, and DEG 96
Combined Variables Predictive of Reading Gain 96
Recommendations 96
Characteristics of Adult City-core Illiterates 96
Methodological Study 97
Study of Predictive Variables 100
Summary 100
Relationships Between This Study and Related Research 102
Potential 102
Tests 103
Methodology and Materials 103
Teacher Pre-service and In-service Training 103
Recommendations for Further Research 103

References 106
General 106
Characteristics of Adult City-core Illiterates 107
Relationship Between Reading and Various Measures 109
Tests and Testing 110
Methodology and Materials 111
i. t. a. 113

Appendix A: Commercially Unobtainable Instruments Used in the Study 117
Experience Inventory--Various Formats 118
For Adult Illiterate Sample (ACCI) 118
For City-core (CCC) and Non-city-core (CNCC) First Graders 118
For Adult Literates (ACCL) 118
Instructions for Scoring EI Room Maps 119
Suggestions for Revisions of the EI 120
Experience Inventory Forms
Adult Illiterates (ACCI) 121
First Grade Children (CNCC and CCC) 125
Adult Literates (ACCL) 132
Davis-Eells Games 136
Appendix B: Testing 156
LAIS: Adjusted Scoring for Pathways Subtest 157
SAT: Item Analysis 157
Appendix C: Pre-service and In-service Training 159
Pre-service 160
In-service 161
Teacher Estimation of Time Allotments 162
Teacher Reactions 164
Appendix D: Materials 166
Control 167
Experimental 167

Materials Produced by Buffalo Research Staff 168
Sample Materials 170
Appendix E: Miscellaneous 181
Book Titles Arranged by Category 182
Additional Tables 184

Table No.	Tables	Page
1	Consistency of Subject Representation of Book Titles As Judged by Six Professional Staff Members	33
2	Demographic Characteristics of Sample: Number, Age, Mean Number of Years in Buffalo Area	42
3	Demographic Characteristics of Sample: Birthplace of Subject	43
4	Demographic Characteristics of Sample: Who Raised the Subject?	44
5	Demographic Characteristics of Sample: Did Subject Have All He Needed to Eat?	44
6	Subject's Childhood Reading Situation: Reading Ability of Immediate Family	45
7	Subject's Childhood Reading Situation: Relative to Whom Subject Felt Closest	45
8	Subject's Childhood Reading Situation: Reading Level of Relative to Whom Child Felt Closest	46
9	Subject's Childhood Reading Situation: Chief Cause of Reading Difficulty	46
10	Subject's Present Reading Situation: Reading Ability of Those in Present Family Situation	47
11	Subject's Present Reading Situation: Identification of Those Who Can Read	48
12	Subject's Present Reading Situation: How Often Is Subject Read To?	48
13	Subject's Present Reading Situation: What Is Read to Subject?	49
14	Subject's Present Reading Situation: Reasons Why Subject Wanted to Learn to Read	49
15	Jobs Held by Subject's Parents: Categorized by Degree of Language Involvement	50
16	Jobs Held by Subject: Categorized by Degree of Language Involvement	51
17	Highest Category of Jobs Held by Subject: Categorized by Degree of Language Involvement	51
18	Possessions: Percentage of Sample Who Owned Radio, TV, Telephone, Phonograph, Car	52

Table No.	Tables	Page
19	Functional & General Knowledges: Percentage of Sample Who Gave Correct Responses on Functional and General Knowledge Questions of the Experience Inventory	52
20	Functional Knowledge: Percentage of Sample Who Responded to How to Handle Bad Radio or TV Program	53
21	Functional Knowledge: Percentage of Sample Who Responded to Rhythm Patterns	54
22	Functional Knowledge: Percentage of Sample Who Responded to Various Orientation Problems	55
23	Functional Knowledge: Percentage of Sample Who Correctly Responded to Tasks Dealing With Room Maps	56
24	Experience Inventory: Book Titles: Mean Percentage of Selection of Each Category	57
25-A	Experience Inventory: Subject Choice of Book Titles First Half of the Measure	58
25-B	Experience Inventory: Subject Choice of Book Titles Second Half of the Measure	59
26	Experience Inventory: Book Titles in Order of Preference in Highest Quartile of Subjects' Selection	60
27	Experience Inventory: Book Titles in Order of Preference in Lowest Quartile of Subjects' Selection	60
28	Experience Inventory: Percentage of Subjects Choosing Titles Representing Each of the Categories When Forced to Choose Between Matched Pairs of Titles	61
29	Experience Inventory: Percentage Comparisons by Rank of Reading Motivation of Experimental (ACCI) and Control (ACCL) Samples	62
30	Experience Inventory: Comparisons Between Experimental (ACCI) and Control (ACCL, CNCC, CCC) Samples: Siblings	63
31	Experience Inventory: Percentage Comparisons Between Experimental (ACCI) and Control (ACCL, CNCC, and CCC) Samples: Selected Map Knowledges	63
32	Experience Inventory: Percentage Comparisons Between Experimental (ACCI) and Control (ACCL, CNCC, CCC) Samples:	64

Table No.	Tables	Page
33	Experience Inventory: Percentage Comparisons Between Experimental (ACCI) and Control (ACCL) Samples: Reading Ability of Those in Present Family Situation	65
34	Experience Inventory: Percentage Comparisons Between Experimental (ACCI) and Control (ACCL, CNCC, CCC) Samples: Selected Functional Knowledges	66
35	Experience Inventory: Comparison of Book Title Choices of Experimental (ACCI) and Control (ACCL, CNCC, CCC) Groups	67
36	Wechsler Adult Intelligence Scale: Mean Raw Scores and Corresponding Scaled Score Values	68
37	Wechsler Adult Intelligence Scale: IQ Means and Standard Deviations	69
38	Leiter Adult Intelligence Scale: IQ Medians and Standard Deviations	70
39	Davis-Eells Games: Raw Scores and Standard Deviations	71
40	Keystone Telebinocular Visual Screening Test: Nearpoint	72
41	Total Subject Data on Keystone Visual Screen Test	73
42	Chi Square Correlations Between Reading Gain and Identification Variables	77
43	Chi Square Correlations Between SAT Reading Gain and Book Preferences	78
44	Chi Square Correlations Between Reading Gain and Functional Knowledges and Possessions	79
45	Chi Square Correlations Between Reading Gain and Maps and Time Information	79
46	Pearson Product-Moment Correlations Between Reading Gain and Significant LAIS and WAIS Subtests	80
47	Summary of the Regression Analysis Showing Multiple Correlation With Reading Gain As Dependent Variable	82
48	Variables and Weights in the Regression Equation	85
49	Item Analysis of Ambiguities in Two SAT Subtests	158

Table No.	Tables	Page
50	Teacher Estimation of Time Allotments in October, January, May	162
51	Experience Inventory: Book Titles More Frequently Chosen Titles	184
52	Experience Inventory: Book Titles Less Frequently Chosen Titles	185
53	Number of Years Subjects Have Lived in the Buffalo Area	186
54	Subjects' Report of Previous School Attendance In Percentages	186

Summary

This three-part study involving 207 adult city-core illiterates from Buffalo and Niagara Falls, New York, reading below third grade level examined (a) the educational characteristics, knowledges and abilities of adult city-core illiterates important to the improvement of reading materials and reading programs; (b) a methodological study of a beginning reading program using the i. t. a. with adult-centered materials paced to adult learning rates and providing pre- and in-service training for teachers; and (c) the identification of variables predictive of reading gain.

The subjects ranged in age from 18 to 81, with a mean age of 46.6 years. The mean residence in western New York was 17.4 years, and the subjects generally came from a southeastern rural non-reading background. Most of the subjects indicated they wanted to learn to read for highly utilitarian reasons. Most of the subjects had telephones, television, radios, and phonographs. Only one-fourth owned an automobile and even fewer were home owners. Most subjects could identify their right and left hands, the number of months in the year, and the number of days in the week. However, a great number had difficulty with simple maps and general directional orientation.

These adult city-core illiterates seemed interested in reading about self-improvement and improvement of their families, better job opportunities, good health and religion. They were less interested in science and sociology, history and civics, but preferred these to titles representing childish fantasy, humor, animal-type stories, sports stories, adventure, and travel. Book title preferences of adult illiterates were more similar to those of literate adults in the city-core area, than to those of children's beginning reading groups in city-core and suburban schools.

The standardized tests and the tests of potential which were used showed that the subjects lacked a number of skills helpful to efficient and effective test taking. They usually had a low level of general information, as well as low skills level. Visual acuity was often inadequate.

In the methodological study, gains by the experimental group were not significantly greater than those made by the control group. However, the child-oriented standardized testing instruments were considered inadequate to measure true gain.

A relatively higher level of communication in the background and reading-oriented present family situations were the most valuable predictive variables. Some variables correlated .20 to .30 with reading gain. A multiple correlation of .32 was obtained from seven variables.

Recommendations are included concerning combination research programs, linguistic analysis, recruitment, adult materials, teacher training, readability formula for adults, a materials study, methodology, and testing. This study identifies and describes the adult basic education student, points out steps that may be taken to improve methodological instruction, and enumerates the need for additional materials and tests to assist in the instructional program.

Chapter I: Problem and Objectives

Background of the Study

Keeping pace with the changes taking place in today's society is a sizeable task for the well-educated. For the illiterate adult it is an impossibility. Illiteracy not only results in lack of personal respect, but also in the inability to obtain or hold a job--a job which might provide personal fulfillment and a reasonable income for one's family. It impairs the individual's level of operation, making him dependent upon those around him to cash his checks, interpret bus signs, and read street markers. In effect, he is unable to function adequately in our literate society. It has become axiomatic to say he is the last one hired and the first one fired. But the most somber tone lies in the fact that next week or next month or next year hold no greater promise than this year, and that as automation and mechanization of jobs continue he will likely find it more difficult to obtain a job in the future than he does now.

The deleterious effect extends to the family of the illiterate. With income below the poverty level or, in many cases, with no income at all, the family is forced to turn to welfare when that is available and crime when it is not. Illiteracy breeds a family attitude of hopelessness in which there is no better tomorrow and in which there is poor food, poor housing, poor clothing, and much disease and illness today.

The next generation is built in the illiteracy and poverty and ghettos of today. The child of illiterate parents has a considerably lessened chance of success in learning to read or becoming well educated than the child whose parents read and write well. Education is the essential path which any people must follow in this world of today to success, to security, to financial sufficiency. George Bernard Shaw has said, "The greatest sin is poverty." The children of the ghetto prove his point.

A child's best teachers are his parents. We can teach a child without his parents, but we can teach him far better with his parents' help. There is a need to teach adults to read.

In the city of Buffalo there are approximately 72,000 functionally illiterate adults, adults who are unable to successfully cope with our literate society because of their inadequate skills. They cannot read the want ads in the newspaper, menus in a restaurant, nor simple directions for operating a machine.

The city-core area where most of these functional illiterates are found produces a noteworthy number of incidents which feature adolescent young people. The summer of 1967 in Buffalo was marred by a major racial disturbance. The participants in the rioting were largely young people. Mayor Sedita of Buffalo recognized this fact when he attempted to control the disruption by meeting with a large group of young people in the downtown Michigan Avenue Y. M. C. A.

One of the overriding tragedies in this situation is the fact that most of these young people do not have parental leadership at home which is effective in keeping them off the streets. The fathers who are missing from these homes are often unable to find jobs because of poor educational attainment. The parent who cannot read or write has a difficult time finding a job. Without a job he feels that he has lost respect in the eyes of his sons and daughters. It is also easier for his wife to receive aid from welfare if the father is not in the home. Therefore, because of lack of respect and because of the needs of the family, the fathers often disappear, leaving the home without proper parental authority.

It is essential that every person who has the desire and ability to learn should be taught to read in order that he can hold a job and take his rightful place in his family.

Little is actually known about the people who live in the city-core areas. The need for this study arose from the fact that teachers and publishers needed to know more about adults in urban centers in order to teach them or to prepare materials for them.

A truism of education is that one needs to start where the person is. But in actuality the adult educator often does not know where his adults are, academically speaking. He does not know what they do know and what they need to know. The investigator initiated the present study in order to find out where the ABE student comes from; what education he has had; the effects of deprivation which he has suffered; the kinds of experiences he has had, such as farm, or factory, or housework, etc.; the kinds of things he is interested in; the abilities and academic skills he already has. What are the kinds of things he needs to know most? How well has he learned to function within his environment?

The field of adult basic education also needed to know what could be done to improve methodology. Little has been done to find out how adults learn best. The learning rate of adult city core illiterates is usually low. One of the anticipated outcomes of this study was to determine whether or not improved methodology is able to change this.

A further need was for the identification of those in the adult illiterate population who were able to learn quite rapidly in contrast to those who were learning much more slowly and needed a different program of instruction. As in many other classes there is a need to individualize instruction in adult basic education teaching. Instruction which moves too fast or too slow frustrates the adult learner even more than the child learner who is notable for his tolerance for repetition. Adult learners are more easily discouraged when they are misplaced. One of the subjects in the present study informed the investigator that he had begun instruction three times previously but had always been placed too high to succeed. Instead of admitting his difficulty, he had found it easier to simply drop out of the class. It thus seems essential to develop an instrument capable of identifying fast, average, and slow learners both for optimum learning and for retaining subjects in the program. The first step toward developing such an instrument is a study on the variables which correlate well with gain in reading achievement and which may be combined in a regression equation to predict success in profiting from instruction.

Description of the Study

The study was divided into three major sections, all somewhat interrelated. The first section, dealing with common characteristics of adult city-core illiterates, proceeded from an original study by Norman Berke at State University of New York at Buffalo. As an elaboration and adaptation of Berke's study, the present study examines certain measures commonly associated with academic ability such as the Wechsler Adult Intelligence Scale, the Leiter Adult Intelligence Scale, and the Davis-Eells Games, and an Experience Inventory added in an attempt to find out more about the adult city-core illiterate in terms of his identification, his past experiences, his knowledges, his abilities and his interests.

The second section of the study dealt with methodology. It tried to determine whether the use of the initial teaching alphabet as a beginning reading medium, combined with materials built for adult interests, paced to adult learning needs, and coupled with a teacher training program providing pre-service and in-service and consultant help would be effective in improving on the slow rate of learning presently customary in adult basic education classes at the lower level. A tighter and more classical design might have made use of only one variable with each of four experimental classes. There were several reasons opposed to this, however, the first being that the major question which underlay the entire methodological study was, "Can anything be done which will speed the present slow rate of learning for adult city-core illiterates in the low basic classes?" It was decided that the use of materials having interest for adults, attention to proper pacing, and a strong teacher training program could all logically be expected to find positive results. The most questionable of the four variables obviously was the initial teaching alphabet. If there seemed to be some risk that materials on adult-interest level or pacing or teacher training would cancel out any positive effect which the initial teaching alphabet might have, it is of course quite possible that the initial teaching alphabet could have cancelled out the positive effects of the other three variables. However, it was felt that a combination of all four variables would be stronger than any one of the four singled out. The question to be answered, "Is it possible to teach adults to learn to read more quickly?" could thus perhaps better be answered by such a four-variable methodological study than by a more classical model.

In addition, by combining all four variables in the experimental program, the experimental population was larger, a factor of no little importance.

The third section of the study made use of the measures of academic potential described above and the Experience Inventory as a pool of variables which were then correlated with success in learning to read. After the initial correlation, certain variables were selected which were combined in a regression equation in order to attempt to predict success in profiting from reading instruction.

Research Questions

The following questions were raised to be answered by this study.

1. In order to gain information about the common knowledges and performance factors exhibited by adult city-core illiterates which might be of value to both teachers and publishers:

> What common characteristics do adult city-core illiterates exhibit when measured by the Wechsler Adult Intelligence Scale, the Leiter Adult Intelligence Scale, the Davis-Eells Games, and the Experience Inventory?

2. Relative to methods of instruction pertinent to adult basic students:

> Do adult city-core illiterates make significantly more rapid gains in reading achievement in beginning reading when the program uses the initial teaching alphabet, uses materials prepared for adult interests and paced for their learning rate, and when it provides consultant and training services for the teachers in the program?

3. In the section of the study which dealt with prediction of success in learning to read two questions were asked:

> Are there significant correlations between gain in reading achievement and factors on the Wechsler Adult Intelligence Scale, the Leiter Adult Intelligence Scale, Davis-Eells Games, and the Experience Inventory?
>
> Is there a cluster of Wechsler Adult Intelligence Scale, Leiter Adult Intelligence Scale, Davis-Eells Games, and Experience Inventory factors which will predict gain in reading achievement for adult city-core illiterates?

Definition of Terms

The following terms are particularly pertinent to this study.

Illiterate

Although definitions vary from situation to situation, in the study herein described, an illiterate is one who reads at less than third grade level as measured by a standardized reading test.

Functional Illiterate

Here again, definitions vary, classifying a person as functionally illiterate who may read anywhere from fourth grade to eighth grade level. Generally as used in this study, however, a person who is functionally illiterate is one who is able to read at no higher than fifth grade level.

City Core

The city-core area as used in this study refers to the ghetto area of Buffalo which is largely peopled by Negroes.

ABE

These initials stand for Adult Basic Education, and whereas in many circles it refers to education up through and including the eighth grade level, once again, in this study it is used to refer to the beginning levels of instruction usually understood to be first, second, and third grade levels in difficulty.

i. t. a.

These initials stand for the initial teaching alphabet, an alphabetic medium created in Great Britain and promulgated and researched by Sir James Pitman and Dr. John Downing of that country. Its use has become widespread both in Great Britain and in the United States. Its aim is to simplify the initial stages of reading instruction by using an alphabet which is later discarded by the student. The initial teaching alphabet works to provide grapheme-phoneme consistency through the use of 44 "alphabetic" symbols which represent the most common 44 phonemes in the English language. Greater cue consistency than exists in the traditional orthography is thus provided.

T. O.

These initials stand for traditional orthography or, in other words, the traditional alphabetic medium commonly in use in the English-speaking world today.

General Design of Study

Although detailed procedures appear in Chapter III, a general overview of the design of the study indicates that it attempts to: (a) identify the common characteristics of the adult city-core illiterate, (b) investigate methodology using the initial teaching alphabet, and (c) identify variables which are predictive of success in learning to read.

The first portion of the study, dealing with common characteristics, identified a population of 207 adult city-core illiterates who were reading at less than third grade level from the basis of their performance on the Stanford Achievement Test, Word Reading and Paragraph Meaning sections. These were each given a telebinocular visual survey to ascertain their ability to see at nearpoint and were then given the Wechsler Adult Intelligence Scale, the Leiter Adult Intelligence Scale, the Davis-Eells

Games, and an Experience Inventory. Although norms are available for the WAIS, LAIS, and Davis-Eells, no comparative data were available for the Experience Inventory. Therefore, sections of the Experience Inventory which were most pertinent and which could be compared to other population groups were administered to approximately 100 adult city-core literates, 100 city-core children who were finishing their first year of reading instruction, and 100 children from fringe or suburban area schools who were also completing their first year of reading instruction. These data were then compared with the performance of the adult city-core illiterate population.

Most of the data were then compiled in tables: (a) for general identification of the adult city-core illiterate, and (b) for comparison of the adult city-core illiterate with the comparative populations.

In the methodological portion of the study the gain scores of a population of 60 adult city-core illiterates instructed through the use of i. t. a. were compared to the reading achievement of a control group of 60 adult city-core illiterates instructed according to methods traditionally used in the Buffalo adult basic education program. Fifty-eight of the 60 students hoped for were enrolled and took part in the experimental study. Intermittent attendance and dropouts from the program found only 27 finishing at the end of the academic year, however.

The experimental population was pretested by the Stanford Achievement Test, Word Reading and Paragraph Meaning sections, and was presented with 200 hours of instruction in beginning reading using the initial teaching alphabet, making use of adult-oriented materials, paced to accommodate the learning rate of this population, and supported by a teacher training program providing pre-service, in-service, and consultantship help. At mid-point in the program and again at the end, subtests of the Stanford Achievement Test were administered. These measures of gain were augmented by observation by the research assistants of the performances of the students, in taped readings, by teacher estimation, and by student reaction.

Pre- and posttest mean differences as measured by the two Stanford Achievement Test subtests (Word Reading and Paragraph Meaning) for the experimental and control groups were tested for significance at the .01 level of confidence. The subjective posttest results, such as observed performance, taped readings, teacher estimation, and student reaction, are presented in tabular form but were not submitted to statistical analysis.

In the study related to the identification of predictive variables, the original population of 207 subjects was identified as reading below third grade level on the basis of their performance on the SAT (Word Reading and Paragraph Meaning sections). This identification measure was also used as a pretest. Each of the subjects, of course, received the WAIS, LAIS, Davis-Eells Games, and Experience Inventory. After the presentation of 200 hours of instruction another form of the SAT subtests (Word Reading and Paragraph Meaning) were given. The teachers were also asked to estimate those who had made good, fair, or poor progress.

Correlations were then computed between the factors identified on the WAIS, LAIS, Davis-Eells, and Experience Inventory, and Reading Achievement as measured by the selected Stanford Achievement subtests, and by the estimation of the various teachers. A selection of all variables found to correlate significantly with gain in reading achievement was submitted to regression analysis with the factors being weighted for greatest predictive value.

In addition to the objective findings of the study, a number of subjective findings which were deemed to be of value to educators and publishers were collected and presented in tabular form.

Limitations

Figures given for illiteracy in America range from 6,000,000 to over 20,000,000 depending upon the criteria used in definition. However, it is necessary to limit the generalizability of this particular research project.

Although the age range for the adults in the literacy project was from 18 to over 80 years of age, it is true that findings of this research program apply most directly to more mature individuals. The findings here may or may not be true when applied to the Job Corps programs and other programs aimed at adolescents and young adults.

A second caution applicable to the population lies in the stipulation that the research deals with city-core native-born Americans. Obviously, applicability to rural and to foreign-born adult illiterates is thus limited.

Perhaps a more subtle limitation of the study lies in the fact that the very presence of these people in classes sets them apart from the rest of the population who are adult illiterates. The individual who voluntarily presents himself in an adult basic education class must have a kind of courage. He has been willing to go on public record as unable to read and write well enough to read labels in a grocery store, signs at the bus depot, or ads in the paper. It is obvious that those who take time to be present in the classrooms have a somewhat higher level of motivation than those who do not appear.

However, a number of these students had been in low classes for some months. The very low adult basic education classes which have been in operation for any length of time gradually accumulate a residual of highly-motivated, but extremely slow-learning students. Although such accumulation is a common happening in adult basic education classes, it may not be fair to say that all adult illiterates would learn as slowly as those in the very bottom segments of the basic program.

A different sort of limitation applies to the characteristics tested. Although one might argue that the instruments used would seem to be valid and the Experience Inventory well constructed, it is obvious that other instruments not selected for inclusion could have been included as easily. Other characteristics undoubtedly will be found which are also valid measures of learning ability.

Still another limitation of the study is one of a temporal nature. In a country in which social change is as marked and as rapid as in America today, any observation on how people are to be identified today may not necessarily be true in the future. Thus some of the minor differences between the study by Berke and the present more extensive study may be explained.

Finally, there are limitations due to the methods which were used in the methodology study. The initial teaching alphabet as an alphabetic medium might have been better or more poorly served if different materials had been used. Conviction of the worth of materials is difficult to support with significant statistical results at this very low level.

Chapter II: Survey of Professional Literature and Research

We may look back in 50 years and realize that part of the struggle taking place in the city core is between achievement and capacity. One of the problems to which this study is addressed is how to quickly identify reading potential in the adult city-core illiterate. It is also important for both publishers and teachers to know to whom they will speak before they can decide how they will speak. And finally, what methods and materials shall be employed.

The detail of how the study proposes to address itself to each of these three questions has been outlined in the preceding chapter. The following review presents literature and research relating to these questions.

Characteristics of the Adult City-core Illiterate

Personal

In a report published by the Department of Labor, Secretary Wirtz (1965) states that in his experience the attitudes of adult illiterates ranged from realism toward self and society to genuine, untreated psychopathy. City-core illiterates have these characteristics plus the dynamics of an urban setting with which to cope. They often represent waves of migrants whose rurally-oriented skills leave them little hope of competing in the specialized urban job market.

However, research has indicated that lack of intelligence has not been the problem so much as lack of proper environmental stimulation.

Deutsch writing on "Social and Psychological Perspectives on the Development of the Disadvantaged Learner" (1964) states

> Reference has been made to the constellation of factors in lower-class life which are associated with a limited range of experiential variability available to the child. Of course, there are probably differing clusters of economic, social, and family factors which are associated with greater or lesser retardation. But the fact remains that lower social class status apparently predisposes to scholastic retardation, even though not all children are equally affected. (p. 235)

Although the reference is to children, it does not seem untenable to assume the same situation with adults, i. e., that the more deprived childhood experiential conditions would predispose to scholastic retardation in the adult. The position is consistent with Hunt's (1961) discussion of Piaget's developmental theories. According to Piaget, Hunt notes

> ...the greater the variety of situations to which the child must accommodate his behavioral structures, the more differentiated and mobile they become. Thus, the more new things a child has seen and the more he has heard, the more things he is interested in seeing and hearing. Moreover, the more variation in reality with which he has coped, the greater is his capacity for coping. (pp. 258-258)

Hunt's own views (1961) contrast strikingly with some of the earlier views of intelligence. He defines intelligence as a central neural process which develops in the brain to mediate between the information coming in (input) and the return signals for motor reaction (output). Hunt's thinking refutes the notions of "fixed intelligence" and "predetermined development"--two long unquestioned dogmas about intelligence. Shifts in intelligence scores would fit with this theory, as would the now more widely accepted theory that proper matching of a child's development with challenging experiences in his environment, are necessary for maximum development.

Pettigrew (1964) in examining the opposition "scientific racist" position led by Professor-Emeritus Henry Garrett notes:

1. The research conducted by McGurk, of Villanova University, used an invalidated intelligence test of McGurk's own design, to reach the conclusion that "Negroes as a group do not possess as much capacity for education as whites as a group" (p. 6).

2. Audrey Shuey's work at Randolph-Macon Women's College in Lynchburg, Virginia "ignores the newer conceptions of intelligence and instead relies heavily upon the earlier, less sophisticated investigations, with over half of her references dated prior to World War II. She also concentrates on research performed in the South, with three-fourths of her studies on students from tightly segregated southern and border communities." Based on the foregoing, Pettigrew discounts Shuey's conclusion, i. e., "...the presence of some native differences between Negroes and whites as determined by intelligence tests" (P. 6-7).

3. Tanser's 1939 investigation of intelligence among Negro and white children of Kent County, Ontario, Canada, cannot be accepted as proving superior white intelligence since "the social and economic conditions" of the two were not equal (p. 7).

These findings, in Pettigrew's opinion, point to the necessity of assuming equivalent backgrounds for individuals and groups under study. He further maintains "...until conditions entirely free from segregation and discrimination are achieved and the floor of Negro poverty is raised to that of whites...definitive research on racial differences in intelligence cannot be performed" (p. 7).

Deutsch (1964) refers to research conducted with samples of middle- and lower-class children at the first and fifth grade levels. He concludes that the language variables considered are by-products of social experience rather than indices of basic ability or intellectual level (p. 242). Earlier, Hilliard and Troxell (1937) studied the relationship between informational background and reading readiness. Their findings pointed to the effect of environmental factors on reading readiness.

> ...this study shows that children equipped with rich backgrounds are more strongly equipped to attack the printed page than are pupils of meager backgrounds because of enriched meanings and thought which the former bring to this task. Research has discovered that one of the greatest difficulties encountered in learning to read is lack of understanding of words and ideas. Meanings grow through experiences and contacts. (p. 263)

Examination of literacy reports from World War II point to the effect of environment upon learning.

> In those parts of the country where school budgets are more adequate and better educational opportunities prevail, both whites and Negroes show a higher degree of literacy. (Trudeau, 1945, p. 14)

And further, results of these programs point to the relative educability of the Negro

> ...a slightly higher percentage of the Negroes than the whites successfully complete the Special Training Program, i. e., - achieve fourth grade standards...and demonstrate sufficient mastery of pre-basic military subjects to warrant their being forwarded for regular training. Further study of the data shows that the speed at which Negroes accomplish the desired standards is approximately as rapid as the rate of the whites. (ibid.)

North, summarizing studies of Negro intelligence (1941), concludes that although there are measured intelligence differences, they are not so great as to rule out the possibility of production by environmental factors. His conclusions were supported by Lee (1951) who found that measured IQ's of southern Negro children who migrated to Philadelphia increased depending on length of residence and amount of schooling.

Deutsch and Brown (1964) found that children with some pre-school experience have significantly higher intelligence test scores at the fifth grade than do children with no pre-school experience, when socio-economic status is controlled.

These findings would seem to support the conclusion that lack of opportunity or identification and utilization of abilities rather than lack of intelligence is the more basic problem to be combatted in working with the disadvantaged.

Family

In a study reported by Deutsch (1960) it is stated:

> Of the major socialization foci for the child, the most potent agent is the home and the family--a poor home experience predisposes the child to be less, rather than more, easily reached by the school as a socialization institution...it is reasonable to assume that a broken home is a poorer socializing agent than is an intact home.
>
> When the experimental and control groups are combined and the children from broken homes are compared with those from intact homes, the broken-home group is found to be significantly inferior in scholastic performance. (Deutsch, p. 9)

Deutsch further reports that negative family atmosphere and broken home status are not highly correlated. "Apparently scholastic achievement is related to relatively better social and economic conditions in the home, but is largely unrelated to family atmosphere."

Other points mentioned by Deutsch and Brown (1964) also relate to family circumstance. They note the relationship found between absence or presence of father and achievement need and aspiration levels. They further note that the absence of the father is used as a rough indicator of family cohesiveness. "...significant differences are obtained on the race and presence of father variables...children coming from homes where fathers are present having significantly higher scores than children from fatherless homes" (p. 29). And further:

> In our samples, for example, there is a significantly greater frequency of broken homes among the Negro group, as compared with the white, and it is hard to estimate what the overall effect may be of this family instability in the development of the Negro child. From these data, it is quite conceivable, if not probable, that one effect would be the systematic lowering with age of I. Q. scores of the children where markedly unfavorable social conditions exist. (p. 34)

Fisher (1962) writing on Education and the Disadvantaged American for the Educational Policies Commission of the NEA sketches some of the radical changes which are taking place among the culturally disadvantaged.

> Some of their basic cultural institutions and attitudes not only fail to help but actually impede their adjustment. Family customs, particularly those of some rural Negroes and hill whites, are of this type. For example, rural Negro families usually constituted a stable work group, with specific and understandable roles for each member, even when the family was matriarchal and the men did not fill the role of breadwinner. So long as the rural society was stable, a boy could learn his own life role by observing men at work in the fields, whether or not he recognized one of them as his father or as head of his family. Girls, too, could learn an adequate adult role by observation. But such learning is difficult in the cities. There the child cannot observe the occupational role of male members of the family group, who, when employed, work away from the home; and often no man lives regularly with the family. Nor does family tradition fill the gap, as it does for many children, by providing the concept that the father is provider and head of the family. The mother is often incapable of providing for her daughters a model of homemaking appropriate to successful city living. And the playmates of the migrant child, who are likely to be as disadvantaged as he, are unable to compensate for the failure of his home.
>
> Often the adult models are not harmful, but merely fail to inspire emulation. Family ties may be strong, and fathers may wish to discharge their financial responsibilities. But if the societies from which they come have failed to provide appropriate education and skills, the parents will have serious employment difficulties, perhaps compounded by a language barrier, and will earn little respect in the community. The children are then likely to seek their models outside of the home. (p. 7)

The home environment which Fisher describes as detrimental for the disadvantaged child, most probably offers a similar negative influence to the adult illiterate, who in many instances is trying to cope not only with the frustrations of his children, but with his own inadequacies.

> Ideally the family provides for the physical and emotional well-being of children and raises them to levels of understanding, expectation, and aspiration which support the school's effort to promote intellectual growth. But these foundations are often lacking in the case of the disadvantaged child.
>
> The educative process is greatly complicated for the child whose home is characterized by poverty, disease, instability, or conflict. Such homes tend to produce children who are tired, hungry, ill, and emotionally unstable. Where physical punishment is common--as it is in many disadvantaged homes--the children may learn that violence is their best weapon and often their only defense. Disadvantaged children suffer from some or all of these handicaps. They therefore often have difficulty in concentrating on learning and show indifference or outright hostility to the school. (ibid., p. 12)

In a more literary vein, Burghardt DuBois' Souls of Black Folk (1903) vividly paints the background for a large segment of the city-core illiterate. His picture of the Negro family at the turn of the century may give more of the why of the broken home and the persisting matriarchical society than even the later research.

Social

Description of the factors which surround the typical city-core inhabitant might include:

Poverty and economic deprivation. Under the provocative title "Our Invisible Poor" MacDonald (1963) reviews the status of the poor in the U. S. He rebukes Galbraith's (1958) notion that poverty in this country is no longer "a massive affliction (but) more nearly an after thought," and cites rather "...the rate at which poverty is being eliminated has slowed down alarmingly since 1953) (p. 82). His refutation is based on the fact that although "the average family income increased from $2,340 in 1929 to $7,020 in 1961...almost all the recent gain was made by families with incomes of over $7,500" (p. 82). Technological strides are making it even harder for the less skilled to cope with technical demands. The sample under examination in this study represents this unskilled population. For the most part it is the older generation that, if not on welfare now, most likely will find itself faced with that prospect as job demands become more acute. And, as MacDonald points out, "There is a distinction which cannot be measured arithmetically, between poverty and low income. A childless couple with $3,000 a year is not poor in the way an elderly couple might be with the same income. The young couple's statistical poverty may be a temporary inconvenience...but the old couple can look forward only to diminishing earnings and increasing medical expenses" (p. 91-92). Figures cannot really describe what it means to live on $3,000 a year or less. Kolko (1962) summarizes the model post-war budget drawn up by the Bureau of Labor Statistics:

> Three members of the family see a movie once every three weeks, and one member sees a movie once every two weeks. There is no telephone in the house, but the family makes three pay calls a week. They buy one book a year and write one letter a week.
>
> The father buys one heavy wool suit every two years and a light wool suit every three years; the wife, one suit every ten years, or one skirt every five years. Every three or four years, depending on the distance and time involved, the family takes a vacation outside their own city. In 1950, the family spent a total of $80 to $90 on all types of home furnishings, electrical appliances, and laundry equipment.... The family eats cheaper cuts of meat several times a week, but has more expensive cuts on holidays. The entire family consumes a total of two five-cent ice cream cones, and one five-cent candy bar, two bottles of soda, and one bottle of beer a week. The family owes no money, but has no savings except for a small insurance policy.
>
> (As quoted by MacDonald, p. 94)

But as MacDonald points out, "This is an ideal picture, drawn up by social workers, of how a poor family should spend its money" (p. 94). The proliferation of installment buying, alcoholism, dope addiction, etc. suggests that perhaps this is not the way the money is being spent. Some of the concomitants of poverty as pointed out by Harrington (1962) are loneliness, emotional upset, physical deprivation, mental illness and isolation. And if all this were not enough, "The poor actually pay more taxes, in proportion to their income, than the rich" (MacDonald, p. 122), as is also so ably pointed out in the study by Caplovitz (1963).

Deutsch (1964), in the study cited earlier, looking more specifically at Negro data says, "When one surveys the entire mass of data, what is striking is the fact that on most of the social variables, the Negro group shows greater deprivation" (p. 34). And, as if directed to the racist-theorists, "It would seem probable that when behavioral scientists have been able to classify and measure the elements and variables in social deprivation, the observed differential in intelligence list scores between Negro and white samples will be accounted for" (ibid.).

One of the obvious variables for the lower income family is food. Although in 1961 a United Nations survey of the diets of the world population showed that 80% of the three billion people then living in the world have never had what Saturday Review editor Richard L. Tobin (1961) termed "the good square meal which a North American takes for granted," Mr. Tobin was probably not referring to the type of meal available to the welfare family of six trying to exist in the North American economy on an annual income of $2500.

The effects of this kind of deprivation have been noted by Chilman (n. d.) where she says:

> Another question that must be raised in this analysis of variables that may contribute to the life styles and conditions of the very poor is that of the part that may be played by physical-constitutional factors, both genetic and acquired.... To an unknown extent, the apathy, lack of goal commitment, and resignation more typical of the very poor may be partly a product of an impaired level of physical health and functioning. Physical factors and their possible effects on the life styles of the very poor also constitute another large body of knowledge beyond the limits of this presentation. Their probable importance is simply mentioned here lest the impression be given that the subcultures of the very poor are totally associated with social psychological, and economic variables (p. 35).

Dennis (1963) notes further sources which draw attention to the consequences of certain childhood deprivations.

> Ribble (1943, 1944) and Spitz (1945, 1946a, 1946b, 1949, 1951) have proposed that if certain stimulus deprivations occur in early childhood the consequences are drastic and enduring. These views have arisen largely from observation of infants in institutions. The supporting evidence has consisted in part of scores of institutional subjects on infant tests and in part upon general impressions of the emotional states of the children. (p. 315)

Harrington (1962) indicates that 56 percent low-income farm families were deficient in one or more basic nutrients in the diet (p. 45).

Webster (1966) reports that in examination of prenatal and paranatal factors in Negro child development he was forced to hypothesize that adequate prenatal maternal nutrition was probably the important variable responsible for the finding that Negro growth and behavioral development rates were different from similar white rates (p. 288).

He further adds:

> Our entire theoretical structure seems to hold together a bit more firmly when we report that nutritional factors now seem to be implicated in some of the complications of pregnancy and prematurity. (p. 290)

Finally, in the study conducted by Franklin, Schille, Brozek, and Keys (Franklin et al, 1958) involving 36 "normal" young men (mean age 25.5) it was shown that "Six months of semi-starvation produced marked deteriorative and adaptive changes in all subjects" (p. 361). Personality changes such as depression, irritability, "nervousness," and general emotional instability occurred.

Considering the foregoing it is not unlikely to assume that environmental factors such as inadequate diet associated with near poverty and deprivation do indeed take their toll upon the mental abilities of the adult illiterate.

Hollingshead and Redlich (1958) point to mental illness as another haunting element in the poverty syndrome. Although, as with physical illness, mental illness is much greater among the poor than among the well-to-do, it does not show on the record as soon because the poor cannot afford to pay for treatment as soon. As quoted from Social Class and Mental Illness:

> They found that the rate of "treated psychiatric illness" is about the same from the rich down through decently paid workers--an average of 573 per 100,000. But in the bottom fifth it shoots up to 1,659 per 100,000. There is an even more striking difference in the kind of mental illness. Of those in the four top income groups who had undergone psychiatric treatment, 65 percent had been treated for neurotic problems and 35 percent for psychotic disturbances. In the bottom fifth, the treated illnesses were almost all psychotic (90 percent). This shows there is something to the notion that the poor "can't afford" nervous breakdowns--the milder kind, that is--since the reason the proportion of treated neuroses among the poor is only 10 percent is that a neurotic can keep going, after a fashion. But the argument cuts deeper the other way. The poor go to a psychiatrist (or, more commonly, are committed to a mental institution) only when they are completely unable to function because of psychotic symptoms. Therefore, even that nearly threefold increase in mental disorders among the poor is probably an underestimate.

Apart from the material considerations of food and finances, the disadvantaged have other cycle-producing problems which are an equal hindrance to the possibility of their breaking away from their limited circumstances.

Deprived language background. It is perhaps appropriate that a consideration of the effects of deprived language background should come from an Englishman. Basil Bernstein (1960) contrasts restricted and elaborated language with much the same end in view as Havighurst (1964). Bernstein contends that different emphases are placed on language potential. It is these emphases and not the level of measured intelligence which orient speakers to distinct and different types of relationships to objects and persons. Havighurst defines the socially disadvantaged by family, personal, and social group characteristics. He notes that the socially disadvantaged child lacks:

> A family conversation which: answers his questions and encourages him to ask questions; extends his vocabulary with words and with adjectives and adverbs; gives him a right and a need to stand up for and to explain his point of view on the world. (p. 212)

This characterization would most assuredly extend to the adult city-core illiterate, but in reverse. He tends not to ask questions. His vocabulary lacks adjectives and adverbs. He has not sensed the right and need to stand up for and to explain his point of view to the world.

Reading Gain and Various Measures

Berelson and Steiner (1964) discuss intelligence as defined and measured by tests such as the Stanford-Binet (I. Q.), The Wechsler-Bellevue, and the Wechsler Adult Intelligence Scale, or WAIS. Although a contrasting view supports the flexibility of measured intelligence scores (Hunt, 1961), it is perhaps important to note what has been the prevailing philosophy regarding intelligence measures and success in academic subjects such as reading. As Berelson and Steiner point out:

> ...the tests are designed to measure what most people mean by "intelligence" or "mental ability"--quickness of mind, ability to "see through" a problem and solve it, verbal and numerical aptitudes, capacity to see relationships and to reason, etc. Furthermore, measured intelligence among children and adults is by no means an artifact of the particular test employed or of testing in general. Actually the major tests of general intelligence have high positive correlations with each other, so an individual's position in a group is not likely to vary greatly with the particular test used. (op. cit., p. 211)

They further note correlations between I. Q. and achievement in various high school subjects: with reading comprehension, .73; with reading speed, .43; with English usage, .59, etc. (p. 212). And further, "I. Q. scores are quite stable after the age of six or seven. Fluctuations occur, but they are small compared to the range of scores; so the relative standing of a child within this group is not likely to change much" (p. 215).

Having stated the viewpoint of many psychologists and educationists as well as of the general public regarding intelligence as a fixed quantity, let us now turn to opinion and research which may point to the need of new measures for certain segments of the population--namely, the adult city-core illiterate.

Demming and Pressey (1957) "...sought to construct tests with content and tasks more natural or 'indigenous' to adult life" (p. 315). Their assumption was that if intelligence tests for adults actually tested the skills needed for functioning, alert adulthood, then the results might show correspondingly higher scores for adults. Their results suggested that, rather than deterioration, "...adults do become increasingly better informed with age, if the information tested is 'adult' information--rather than samplings from a dictionary or other miscellaneous matter with which most adults do not seriously concern themselves" (p. 319). Although these findings resulted from Public Health Service Project M 578 MH concerning superior old people, they still provide a thought-provoking vantage from which to consider the problem of testing the adult illiterate. For, as the authors conclude, "...should not other tests, in batteries for appraisal of adult abilities, also be made more appropriate to adults, and might they then show less decline with age" (p. 319)?

Brice (1965) also notes the "pressing need to evolve some field tests." While Burroughs (1956) cautions lest too much emphasis be laid upon evaluation which he equates with measurement: "...to fundamental education as a whole, and in its significant effect on the lives of individuals, it is doubtful whether it is appropriate and it certainly seems inappropriate at its present stage of development" (p. 310).

Whittemore, Echeverria, and Griffin (1966) in a MDT study concerned with examining the utility of certain testing instruments as applied to MDTA Basic Education Classes, recommend three instruments as useful in placement and progress evaluation in reading and computational skills:

1. Iowa Silent Reading Tests, or
2. Gates Reading Survey
3. Differential Aptitude Test for placement in computational courses.

None of these tests has been designed specifically for use with adults.

It would thus appear that although the need is great the supply is as yet meager. Within the last year two tests have been published[1] which will need to be tried with the many different populations called collectively "the city core." These do not purport to be predictive of success in reading. An instrument which might be simply used as adult illiterates register for their first class is still very much in need.

Reading Gain and Various Factors

Research relating to the comprehensive question: Do adult city-core illiterates make significantly more rapid gains in reading achievement when their materials are geared to adult interests and are appropriately paced for the capacities of the individual rather than when such methods are not employed, when taught to read using the initial teaching alphabet than when taught using traditional orthography, and when their teachers are given both pre-service and in-service training? will be presented after a general discussion of methods and materials as they relate to the characteristics of adult city-core illiterates is considered.

Insofar as children are concerned, the pendulum has swung to the point where age is perhaps not considered so critical as "readiness" in learning to read, where the importance of developing a positive attitude toward reading (attitude often suggested to be a result of the child's environment) becomes a more important task for the teacher than teaching vowel rules, and where providing effective motivation for reading can make the difference between a child's catching fire in reading or not.

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[1] Karlsen, Bjorn, Richard Madden and Eric F. Gardner. Adult Basic Learning Examination (ABLE). New York: Harcourt, Brace & World, 1967.
Tiegs, Ernest W. and Willis W. Clark. Tests of Adult Basic Education (TABE). Monterey, Calif. California Test Bureau (Div. of McGraw-Hill) 1957, 1963, 1967.

With adult illiterates, although "readiness" may be as important to consider as it is with children, the age of the adult may also influence his ability to learn to read. Pressey and Huhlen (1957) have suggested that the mental prime of an individual is roughly analogous to his physical prime, and Pressey (1960) submits that there is "...a slow decline in basic capacity for learning or neural plasticity after the twenties, but the decline may be slight for matter relevant to adult interests and adjusted in pace and methods to adult potentialities" (p. 43). The inference might be made that not only must compensations in presentation be made for the neurological and physical decline which may have taken place in the adult illiterate, but that the materials used in teaching such adults must also appeal to their interests.

Sward (1945) cites prejudice, conservatism, insecurity, defensiveness, and religiosity as characteristic of adulthood and old age. Most especially, lack of self-confidence may be a critical characteristic of the adult illiterate, since even in the normal population "Self-confidence is likely to decrease as a person gets into the older years." Worry about finances, health, work and dependence has also been said to increase with age.

It is well known that the socioeconomic backgrounds of pupils affect their school motivation, particularly achievement motivation (Sears and Hilgard, 1964, p. 187). It does not seem unreasonable that this same generalization holds true for adult illiterates, and thus the need for special motivational efforts. A new look at the role of grouping as it affects achievement has been taken by Thelen (1960) which may have important implications for classroom organization of adult literacy classes. The value of intrinsic versus extrinsic motivation must also be a concern, in that intrinsic motivation is said to be of more lasting value to the individual. A teacher's personal interest in a pupil tends to have an important motivating effect on the pupil.

One may well wonder which methods and materials most effectively incorporate consideration of the above factors in their presentations for adult illiterates. Despite the large amount of research and expository writing in the fields of reading and learning theories, relatively little research has attempted to compare the success of the various methods of teaching reading to adult illiterates. However, the following discussion will perhaps highlight the thinking of those who have led the adult basic education movement in the last thirty years or more.

Adult Interests and Individualized Pacing

Historically Gray's (1930) Manual for Teachers of Adult Elementary Studies is of great interest to the adult basic education teacher or supervisor. The material seems as pertinent and timely now as it must have been useful in the 30's. In fact, had Professor Gray's suggestions on literacy then been nationally opted for instructional purposes, who can say how different the teacher training or literacy instruction picture might be today. However, to this writer's knowledge, no specific research has been conducted based on either the method or materials suggested by Professor Gray. But in their historical context, his early support of grouping and of wide reading based on adult interests (informal reading materials prepared by the teacher based on student experiences; a carefully graded basal reader which would appeal to a wide range of adult interests; and abundant supplementary material for class use) should be noted. His inclusion of specific objectives for the three beginning levels of literacy as well as sample lesson plans, should also be of historical as well as practical value to the literacy teacher or teacher trainer.

In like fashion do both the methodology and materials developed and used by F. Laubach (1960) in his tremendously broad literacy campaign have historical interest for the literacy researcher. Laubach's Each-One-Teach-One theory, if followed to its logical conclusion, has obvious appeal for situations in which enough social fire can be set to activate the learner-teachers. An interesting sidelight here might be Haggstrom's (1965) comment: "These accounts suggest that when the poor are caught up in a social movement which drastically questions the bases of their lives, many of them develop an intense and far-ranging thirst for knowledge" (p. 148-149). As with Gray's methods and materials, however, little actual comparative research involving Laubach's materials and methodology is available. But again, as with the Gray manual, Laubach's Toward World Literacy is rich in suggestions for training people in the Each-One-Teach-One method as well as in suggestions for writing for new illiterates.

Goldberg's (1951) presentation of the approaches used for teaching illiterates inducted into the army in World War II is also of considerable interest--from the standpoints of both history and research.

> In many ways, the literacy training provided in the special training units represents a decided improvement over previous adult education programs. Evidences of this may be found in the care with which the men were selected for training, in the special instructional materials which were developed, in the all-inconclusive nature of the curriculum, in the careful selection and training of teachers, in the frequent and periodic inspections which were made of the units, and, in the final analysis, in the percentage of inducted illiterates who were successfully taught to read and to do arithmetic at the prescribed level. (pp. 2-3)

The phrase which seems most especially significant is: "...in the care with which the men were selected for training." Such an option is not ordinarily open to the teacher of the adult basic education class. However, since the army training program did record such phenomenal progress with some of the trainees, it would certainly seem in order to consider "grouping" for instruction as perhaps one offshoot of this selection process. And, as also suggested by the Gray manual, trainee materials based on the needs and experiences of the men involved were included:

> Four different types of materials were prepared by the special training units for trainees: First, the basic texts which were developed in the early days of special training. Second, the supplementary reading publications which included

> military subject matter and historical and orientation material. Third, the workbooks and exercises in reading, arithmetic, and writing developed for use in conjunction with the basic tests and supplementary materials. Fourth, the daily and weekly newspapers prepared to keep the men informed about current happenings. (p. 131)

Robinson (1952) has reviewed the program carried out with the army trainees and attributes the rapid (12 week) progress to the following:

1. high motivation
2. 24-hour control
3. unlimited funds
4. large reservoir of personnel to provide well-prepared instructors and supervisors
5. freedom of organization and application

Although the teacher of adult basic education classes in most city-core schools might look wistfully upon the five variables just listed, attention might profitably be given to including those aspects of the army program which could be successfully adapted to the basic education program. Student-oriented materials and some aspect of grouping would most certainly come in this category.

In civilian experience, four pieces of research have been undertaken which have relevance for this study. Hilliard spearheaded a massive attack on illiteracy in Chicago in which welfare recipients were required to participate. The resulting study, appearing under the title The Blackboard Curtain (Brooks, 1962), presented the educational and achievement levels of the 680 participants by the

1. state in which the education was completed
2. present age
3. type of assistance
4. age at leaving school
5. social profile

In retrospect Hilliard (1963) wrote:

> There must be different educational methods for these disadvantaged adults, for there is little or no content or test material, or experience for that matter, available for the teaching of literacy to disadvantaged adults. (p. 1037)

The numbers of able-bodied illiterates uncovered through the testing conducted in this study led Brooks to note in the section "Implications for the Community":

> The community cannot afford this disintegration of the family of man. Other communities of the world have invoked the philosophy of the satellite for political ends. And insofar as such policy depends on mental inertia, cultural deprivation and militant pressurizing, it is not confined to alien political arenas. It is here in America, walling off

> communities like Woodlawn behind Blackboard Curtains of illiteracy, denying hope, promoting dependency and draining the community's financial and spiritual resources. (p. 103)

A second piece of civilian research which seems significant is that known as the Norfolk State College experiment. Brooks (1964) and Brazziel (1964) have both written of the factors involved as well as what they considered to be outstanding successes of the program. This was a "... pioneer and pilot study in the training of the hard-core unemployed, unskilled workers" (Brooks, p. 111). Most especially relevant to the current study were their findings regarding materials:

> Books and teaching materials for this type of instruction are almost nonexistent. The major publishing houses have been studying the situation carefully and if a sufficient market can be identified, there is no doubt that they will show what they can do. In the meanwhile teachers will have to spend an inordinate amount of time to gather material from many sources to be effective and program planners must recognize this fact in computing course loads. (Brazziel, p. 146)

Inherent to the success of their program they feel, was the interrelating of general education with technical instruction.

It is perhaps appropriate to follow the Norfolk experiment, which noted the dearth of materials appropriate to this population available in 1962, by mention of the Greenleigh report (1966) which examined the relative effectiveness of four of the basic reading approaches now being used with the adult basic populations. These systems, as they are termed, included AIR (American Incentive to Read - 1959), SRA (Reading in High Gear - 1964), Mott (The Mott Basic Language Skills Program - 1966), and Follett (Systems for Success - 1965). One might note that with the exception of the AIR materials they were all published after the Norfolk experiment. The publishers did indeed show what they could do.

Several recommendations from the Greenleigh study have relevance for the current research. Regarding materials and methodology:

1. All of the reading systems in the field test need to be substantially improved and adapted to the needs of disadvantaged adults.
2. Better supplementary instructional materials need to be developed, especially in arithmetic, social studies, health and the world of work.
3. Instructional materials should not talk down to the students and should be devised for adult students at below fifth-grade reading level and extending through eighth grade (p. 17).

From the Missouri Adult Vocational-Literacy Materials Development Project (Heding, 1967) came the actual materials which were chosen for the core of instruction in the current project. The main purpose of the project was to develop materials "...for teaching illiterate and functionally illiterate adults to read, write, and spell at the functional or sixth grade level in the shortest possible time" (p. 208). The findings of the Missouri research team pointed to the following inadequacies of available basic and intermediate instructional materials: "lack of vocabulary and content appropriate for adult instruction, lack of modern content, failure to incorporate recent knowledge, concepts, and methods of instruction, neglect of the vocational and daily life interests and motivations of adults...unsuitability for use in group teaching situations" (*ibid*.). Their materials purport to remedy these deficiencies "...when used by trained teachers who are prepared in the use of the initial teaching alphabet and in the teaching of reading."

i. t. a.

The initial teaching alphabet (i. t. a.) was developed for the purpose of improving reading instruction by simplifying and regularizing the traditional English orthography (T. O.). Its roots are found in the belief of Sir James Pitman (1966), the designer of i. t. a., that the major cause of reading failure is to be uncovered not in the "main three misdirections" of reading research--teacher, materials, and method effectiveness--but in the medium of instruction used in the initial stages of learning to read.

i. t. a. replaces the more than 2000 varied spellings in T. O. with 44 characters that contain a high degree of sound-symbol consistency with the 40 sounds of English. Twenty-four traditional characters are retained and 20 new ones are added. Because Pitman sought a similarity of shape between i. t. a. and the lower case T. O., the new characters are formed by combinations of T. O. characters or shapes that have a semblance of T. O. configuration. Lower case characters only are used and capitalization is indicated by making a larger size lower-case shape. Despite failures in certain grapheme-phoneme correspondence which result in a relatively minor amount of ambiguity, i. t. a. vastly reduces the irregularities characteristic of T. O. As its name indicates, i. t. a. differs from previous orthography reform in that it does not seek to permanently replace the standard writing system. Rather, it was designed to augment the standard system by serving beginning readers in their initial stage, after which it is discarded as the student makes a transition to T. O.

Introduction of i. t. a. in the late 1950's has been followed by a body of research investigating the validity of Sir James Pitman's original proposition. The majority of research focuses on the study of reading instruction for children.

Results indicating differences in reading achievement in favor of i. t. a. The most extensive investigation on the use of i. t. a. was conducted from 1961 to 1966 by the Reading Research Unit of the University of London Institute of Education. The experimental and control groups were matched on school and pupil variables. Both groups used the same basal reader series, printed either in i. t. a. or in T. O. No teaching methods were prescribed for either group and teachers were asked only that they continue with their usual approach to the teaching of reading. Attempts were made to equalize the Hawthorne effect in both groups. In short, the groups were so matched as to believe that "any differences in attainment between the two groups must be the result only of the change in the writing-system in which the books were printed" (Downing, 1968).

Data from a variety of tests produced three main conclusions (National Foundation for Educational Research, 1967):

1. i. t. a. produces superior results in T. O. reading, and in T. O. spelling by the end of the third year in school.
2. The success of i. t. a. in improving T. O. literacy skills occurs in spite of an important setback in the growth of these basic skills at the stage of transition from i. t. a. to T. O. "The T. O. test results between the middle of the second year and the beginning of the third year of school showed the achievements in T. O. were poorer than they had been a few weeks or even months earlier on the same tests in i. t. a." (Downing, 1967).
3. The traditional orthography of English is a serious cause of difficulty in the early stages of learning to read and write.

Concern about the lack of control over the teacher variable led to a second i. t. a. experiment in September, 1963 (Downing and Jones, 1966). Although the differences between the experimental and control groups of this experiment tend to be smaller than those between the experimental and control groups of the original experiment, it was concluded that the balance of statistical evidence in the second experiment is significantly in favor of i. t. a.

The i. t. a. Symposium (National Foundation for Educational Research, 1967) presents a detailed account of the original experiment and evaluations of the validity of the research. The judgments range from Artley's (1967) statement that "the Downing report presents the results of a definitive and completely objective study of the value of the Initial Teaching Alphabet in early reading" to Diack's (1967) criticism of the "extreme thinness of the research" which failed to satisfy his hope "for something more fundamental." Wall (1967) reviewed and summarized the evaluations. While sustaining certain criticisms that "limit the generalizability of the results" he cautiously upheld the conclusions of the experiment.

In the United States, Mazurkiewicz (1967) showed i. t. a. taught children to be rated higher on the basis of instructional level at the end of second grade. For example, 13% of an i. t. a. group was reading at a 4.1 level or higher while only 5.9% of the T. O. group was at this level. However, statistical differences on standardized tests did not offer strong evidence in favor of i. t. a. For example, the results of the Stanford Achievement Test in May, 1966 for a matched sample showed no significant differences for the Word Reading, Paragraph Meaning, and Word Study Skills subtests. Significant differences in favor of i. t. a. were found for the Spelling and Language Skills subtests. Of other published research, only Bosma and Farrow (1965) seem to present statistical evidence clearly in favor of the reading achievement of i. t. a. taught children. Other published research (Baker, 1966; Dunn, Muller and Neely, 1966; McCracken, 1966; Tanyzer, 1965, 1966a) are similar to those of Mazurkiewicz in that while they offer partial evidence supporting the use of i. t. a., other evidence from the experiments shows no differences between the experimental and control groups. This will be discussed further in the next section.

Results indicating no difference between i. t. a. taught students and control groups. The two year studies of i. t. a. sponsored by the U. S. Office of Education (Fry, 1967; Mazurkiewicz, 1967; Hahn, 1967; Hayes and Wuest, 1967) produced no significant differences between groups on most parts of the standardized tests used. However, it is not exactly correct to say that the results are contrary to Downing's findings, since none of these studies controlled the materials-methods variables and sought to study only the instructional medium.

Tanyzer conducted two studies which yielded conflicting evidence. The U. S. O. E. study (1966a) mentioned above compared Mazurkiewicz's Early-to-Read Series (i. t. a.) with Scott, Foresman and with Lippincott Series. The results showed the i. t. a. approach to be more effective than the Scott-Foresman T. O. system but only equal to, and on one subtest inferior to, the Lippincott T. O. system.

Conclusions are further complicated by an earlier study by Tanyzer, Alpert & Sandel (1965) in which the Early-to-Read i. t. a. series showed no significant differences when compared with various T. O. groups used as controls in the study.

McCracken (1966) compared first grade children using the Early-to-Read i. t. a. program with children using the Ginn Basal Reader Series. In an attempt to control for the Hawthorne effect, the classes using the Ginn Basal Readers were divided into classes part of whom knew they were part of an experimental population and part who did not. Overall the experimenters felt that the experimental group did not show any clearcut superiority in general achievement over the control group at the end of first grade, although there were some significant differences.

Research with i. t. a. in special populations. Dunn, Mueller, and Neely (1966) report the study of first grade underprivileged children in which the Early-to-Read i. t. a. series was compared with the Peabody Language Development Kit (PLDK). There were three experimental groups and one control. One experimental group used i. t. a. alone, another used i. t. a. in conjunction with PLDK, and a third used PLDK without i. t. a.

The results showed that children receiving both i. t. a. and PLDK were superior to those receiving i. t. a. without PLDK. They in turn were superior to those receiving PLDK without i. t. a., who were themselves superior to the controls.

Baker (1966), Tanyzer (1966b), and Gardner (1966) reported varying degrees of success with the use of i. t. a. in remedial reading. Unfortunately, the research was not tightly designed and leaves room for questioning the results.

Studies have been done with dyslexic children (Brown, 1966), emotionally disturbed children (Barclay, 1966), and children with hearing problems (Duffy, 1966), and speech impairments (Sharp, 1966). All have reported the successful use of i. t. a. with their populations. However, much of the evaluation has been subjective and only Barclay's study reports test results for a control group.

Research with i. t. a. and adult populations. A study of inmates at the Oregon State Penitentiary was presented by Pahrman (1966). Beginning in June, 1964, 65 inmates participated in a program using i. t. a. After using the i. t. a. program for two years the results were compared with those of 158 inmates taught with T. O. between 1961 and 1964. The average grade level was 1.5 for the i. t. a. group and 3.5 for the T. O. group; the respective I. Q.'s were 73.5 and 78.4. Pahrman found that the average percentage achieving a fifth grade level was 76.9 for the i. t. a. group and 60.1 for the T. O. group. It took the i. t. a. group an average of 4.3 months to achieve a fifth grade level, whereas the T. O. group required an average of 6.6 months. The mean grade level gain was 3.2 for the i. t. a. students and 1.7 for the T. O. students.

A similar but smaller population was taught with i. t. a. at San Quentin Penitentiary (Hastings, 1966). Test results are not given, but the study indicated that "functional illiterate" inmates made better progress with i. t. a. than with T. O. A class of 10 men is discussed in which five men who had previously been unable to learn with T. O. were taught to read and write with i. t. a.

i. t. a. instruction with "backward readers, i. e., those whose reading age is twelve years or less," in the British Army was studied by Stevenson (1966). No test results were contained in the account of the study, but Stevenson concludes: "After some fifteen months experimentation, it may be stated that i. t. a. has a very important part to play in alleviating reading retardation of adults."

In March, 1965 the Brooklyn Adult Training Center instituted an i. t. a. remedial reading program with adults whose reading scores were on a third grade level or below. After eighteen months, Hannenberg (1967) reported that standardized reading test scores indicated that "close to 70% of the i. t. a. trainees leave BATC with word perception skills ranging between 6th and 7th grade." This meant that "most trainees advanced three to four years." Scores on a timed silent reading test indicated an average gain of two years. These achievements were made within a 20-week remedial period. No controls were used.

Fifty-three adult men, "most of whom could be termed illiterate and functionally illiterate" were used in a study by Clark (1965). These were welfare recipients whose median age level was 44. The men were divided into an i. t. a. and a T. O. group. These groups were subdivided into four.classes each, according to the students' reading achievement levels. The instructional reading level for groups one and two ranged between 0.00 - 4.00; for groups three and four it ranged between 4.01 and 8.50. The program lasted for eight weeks. Posttests showed that the i. t. a. classes of groups one and two combined improved significantly over the T. O. classes of the same groups in word recognition and instructional level of reading. In groups three and four the T. O. classes did significantly better than the i. t. a. classes in word recognition and silent reading. The researchers concluded that "the finding of this study suggests that i. t. a. tends to facilitate the teaching of reading to illiterate and low performing functionally illiterate adults." It was proposed that i. t. a. be used with adults who achieve a pretest instructional reading level of 0.00 to 4.00.

Heding (1967) directed a project that developed a set of adult vocational-literacy materials which incorporated i. t. a. in its basic reading stage. The effectiveness of the materials was evaluated with three experimental reading classes of adult illiterates in the central Missouri area. Thirty-four students were enrolled in the classes at the beginning of the program on January 30, 1967, and 18 of the original number remained at the end, June 15, 1967. One class received approximately 25 hours of reading instruction, a second received approximately 90 hours, and a third class received approximately 75 hours of instruction. Significant increases in reading performance were recorded on the pre- and posttests in T. O. for the groups receiving 25 hours and 75 hours of instruction. The researchers noted that the group which showed no significant increase in reading ability was the only class taught by a teacher with no training or experience in the teaching of reading. Acknowledging the "inherent danger in drawing conclusions from a small sample," the investigators conclude: "The data tend to give support to the effectiveness of the materials in teaching the student to read."

Summary. Major experimentation in Great Britain appears to support the use of i. t. a. in reading instruction for children, while United States' studies appear to lean toward the conclusion that there is no clear difference between instruction for children which incorporates either i. t. a. or T. O. The strongest evidence American investigators find which supports i. t. a. is the instructional reading levels of the subjects in i. t. a. instructed groups; standardized test results on the whole do not offer similar evidence. A close examination of the content of these studies reveals the American and British experimenters have not pursued the same goals. Whereas Downing has sought to control variables so that only the instructional medium differentiated experimental and control groups, studies in the United States have consisted of comparisons of methods, materials, and mediums within the same experiment, making it impossible to ascertain the clear effectiveness of i. t. a. in relation to other mediums. It appears that further research along the lines Downing has delineated is necessary before firm conclusions about i. t. a. per se can be drawn.

Studies of the use of i. t. a. with adults have been limited by a lack of careful experimental procedures and small samplings. Although the results favor the use of i. t. a. in instruction with adults at the basic educational level, conclusions must be tempered in accordance with the evidence and, therefore, remain tentative pending more definitive investigation.

Perhaps more detached investigators are needed to objectively evaluate i. t. a. Many are involved with i. t. a. programs or competing programs, a number of which have been used in the studies.

Finally in evaluating i. t. a. it might be worthwhile to consider some of the less measurable but nonetheless beneficial aspects of instruction that have been noted in several of the studies, namely, freer writing, greater classroom enthusiasm, and greater confidence in learning (Block, 1967; Mazurkiewicz, 1966; Tanyzer, 1966a; Hastings, 1966; Hannenberg, 1967).

Pre-service and In-service Training

Although the measured effect of teacher pre-service and in-service training on student gain in reading is difficult to obtain, attempts have been made to assess such a variable in reading research conducted with children. Also, certain strong recommendations have come out of the Norfolk, Greenleigh, and Missouri studies regarding such consultive experiences. Adult basic education has "done without" in many areas, one of which has apparently been that of trained supervisory support. Teachers of children have expressed appreciation for the opportunity to share their woes as well as their victories with their peers (Heilman, 1966; Reid et al, 1966; Morrill, 1966).

At the adult level, Brooks (1964) speaks highly of the value of the teacher interchanges which became a regular part of the Norfolk team teaching approach. The Greenleigh (1966) recommendations include "... several weeks of preservice training" (p. 18) and "...continuous in-service training." Heding (1967) writing for the Missouri project, underscores the necessity of teacher training in the teaching of reading in general and the teaching of i. t. a. in particular (p. 207). As one of the conclusions and recommendations to the excellent collection Basic Education for the Disadvantaged Adult: Theory and Practice, Lanning and Many (1966) note

> Pre-service and in-service training of new and experienced instructors should be included as a regular part of the training system on the assumption that many inexperienced or retrained instructors will be needed both to conduct programs and to supplement individual and team efforts of a relatively few experienced adult instructors. (p. 408)

Deutsch (1960) also speaks of the positive values of teacher's seminars conducted over a two-year period in the experimental school.

Fischer (1962) adds an interesting note to the plea for in-service training in speaking for the Educational Policies Commission of the NEA:

> In many large school systems consideration should be given to developing a new type of educator--a specialist in the problems of relationships among different American subcultures. This person would attempt to relate anthropology and sociology to education. He would need intensive preparation in these three areas and practical experience in disadvantaged neighborhoods. He would help to build contacts between school and home, conduct an in-service program for all the members of the staff, and assist the staff in the solution of individual problems. (p. 22)

Goldberg (1951) noted 12 characteristics of the army illiteracy program which he felt contributed to its success. One of these was "The provision for pre-service and continuous in-service training of instructor and supervisor personnel (p. 295).

These recommendations thus strongly support the value of including pre-service and in-service training as an integral part of adult as well as child-oriented reading programs.

The preceding chapter has attempted to present both opinion and research relative to the three questions:

1. What characteristics best describe the adult city-core illiterate?
2. What is the relationship between gain in reading achievement and various intelligence measures?
3. How do characteristics of the adult city-core illiterate demand that different methods and materials be used in teaching beginning reading?

As noted, there are facets of each question which need closer viewing. The succeeding chapters will present how this study attempted to approach each of the three questions and what was found.

Chapter III: Methods and Procedures

Introduction

Following a description of the population and of the experimental sample, the methods and procedures of the research are outlined under three headings: Study of the Characteristics of the Adult City-core Illiterates; Methodological Study; Study of Variables Predictive of Reading Success.

Population

The study was undertaken in Buffalo and Niagara Falls, New York, cities of approximately 500,000 and 100,000 population respectively. The Niagara Frontier, the metropolitan area embracing these two cities, ranks fifteenth among the nation's urban centers and encompasses over 1,300,000 inhabitants.

The industrial organizations operating in the Niagara Frontier are numerous: There are seven General Motors plants employing nearly 20,000 people, while 4500 are employed at Ford Motor Company's stamping plant. In 1967 alone new manufacturing invested more than $100,000,000 in this area. In the same year, military defense orders totalling about $735,000,000 were placed in Buffalo plants. Buffalo is not only the home of Bethlehem Steel's largest steel mill, but the city boasts of being the world's largest flour-milling center, producing quantities greater than those of Kansas City and Minneapolis combined--over 24,000,000 100-pound sacks were processed in 1966. Twenty-four grain elevators with a combined capacity of 48,000,000 bushels are in constant use.

The research project was accomplished through the help of the adult basic education classes held in the core areas of Buffalo and Niagara Falls--areas where deteriorating physical structures (some dating back to early settlement years), cramped living quarters, and other environmental deficiencies combine to produce appalling blight and obsolescence.

There are some 72,000 functionally illiterate adults in Buffalo, while a corresponding number can be found in Niagara Falls. Most of these live in the core areas. Fortunately, the adult basic education programs in both cities have been long established and thus have provided excellent vehicles wherein to conduct research aimed at improving instruction of adult illiterates.

In recent years many programs in the Niagara Frontier have become active in trying to reach the undereducated and disadvantaged populations. Presently there is a Manpower Development Training program, a Jobs Education Training program, a Community Action Organization program, a University Urban Center program, a University Store Front program, and a College SEEK program. Various Federal programs in the public schools (Upward Bound, for example) and such private foundations and organizations as the Y. M. C. A. which is providing a Y-Academy program for disadvantaged gifted Negro youth, are also active in the area. Although most of the above-named programs are aimed at improving educational programs for young people, the adult basic education program, the JET, CAO, and Store Front centers are all aimed at adults.

Sample

The experimental sample was selected from students attending adult basic education classes in Niagara Falls and Buffalo at the basic level (usually not reading above 3.0 as defined by a standardized reading test). All members of the experimental sample were over 18 years of age, were living in the city-core areas, had an average reading score below third grade level on the Stanford Achievement Test - Word Reading and Paragraph Meaning sections, and had sufficient vision to be able to learn to read as tested by the Keystone Telebinocular.

Study of the Common Characteristics of Adult City-Core Illiterates

Experimental Population

For the first portion of the research project an experimental sample of 207 adult city-core illiterates was chosen. This meant that virtually every possible student meeting the criteria for selection was included in the sample. It should be pointed out that a number of these students had been attending very low level basic classes previously for some months. This had the effect of building a number of residual students--those who had not been successful in learning to read.

As many students from the experimental population as possible were given the Wechsler Adult Intelligence Scale (WAIS), Leiter Adult Intelligence Scale (LAIS), Davis-Eells Games (DEG), The Experience Inventory (EI) and the Stanford Achievement Test (SAT) - selected subtests.[1]

Testing for intelligence and potential. 1. Wechsler Adult Intelligence Scale (WAIS). The WAIS was chosen because of its ability to measure general academic potential. According to the review in Buros "the WAIS stands alone...as a paragon of Intelligence tests," and it has been quite effectively used by Plant and Lund (1958-59), and by Wall, Marki, Ford and Ziegler (1962) as a predictor of academic success. It seems likely that it samples knowledge, comprehension, and performance factors of importance for academic learning for adult illiterates. It is an individual intelligence test and takes approximately one hour and 15 minutes to administer.

The advantages of the WAIS may be itemized as follows: (a) Highly respected among professional clinical psychologists; (b) well standardized; (c) provides both verbal and performance subscale scores; (d) individually administered, thus allowing for more accurate following of directions; and (e) has been shown to be as useful a predictor of academic performance as any other test of this type.

After 55 WAIS tests had been administered it became apparent that few subjects were achieving any correct answers after two consecutive misses on the following subtests: Block Design, Picture Arrangement, Object Assembly. Further checking revealed that only four subjects had so scored. Therefore, it was agreed that the administration of these three subtests might be discontinued after a subject had made two consecutive errors. The four test exceptions mentioned above were rescored according to this new policy.

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[1] Facsimiles of the DEG and the three forms of the Experience Inventory may be found in Appendix A.

2. Leiter Adult Intelligence Scale (LAIS). The LAIS was included because of its purported ability to measure the academic potential of handicapped individuals. Leiter has attempted to construct a test common to all races, incorporating better and more comprehensive nonlanguage materials. In considering the illiterate city-core adult as culturally deprived, an evaluation of his knowledge and performance factors provided by the LAIS thus might furnish additional valuable information. The LAIS is an individual intelligence test and takes approximately 40 minutes to administer.

Preliminary examination of LAIS results revealed almost no achievement on the Pathways subtest if scored according to manual instructions. In order to gain any information from the subtest an adjusted scoring procedure was employed (see Appendix).

3. Davis-Eells Games (DEG). The Davis-Eells Games was chosen because it is a group intelligence test in pictorial form with no reading required. The items were designed to cover real-life problems and it is a measure of social learning maturity. Since it is designed to attempt to remove socio-economic differences from the test situation and to measure behavior in problem situations, it appears to hold promise as a measure of pertinent knowledge and performance factors. Administration of the DEG takes approximately one hour.

4. Experience Inventory (EI). The EI individually administered to each of the city-core illiterates was included to provide background information about experience, knowledge, interest, and performance factors. The items on the inventory were designed to (a) identify the subject, (b) sample the possessions he has, such as telephone, television, radio, newspapers, magazines, etc., (c) sample the subject's general functional knowledges related to his possessions (Suppose your telephone was out of order. What would you do?), (d) sample certain operational knowledges concerning time, direction, orientation, ability to gain meaning from a map, and costs of common items, and (e) to sample his reading-associated interests.

The inventory in its original form was constructed by Don A. Brown and Norman D. Berke for use in Berke's doctoral study (1967). Certain revisions of the original inventory were made for the current study. Samples of the various EI's used in this study and the rationale for adjustments may be found in the Appendix. The instrument used for the adult city-core illiterate (ACCI) population differed from the Berke-Brown instrument in the following respects:

In the section designated "reading-associated interests," adjustments were made in the presentation of the book title choices because it was felt that the original listing provided neither equal nor systematic representation of the various areas judged to be of most interest to this population. Accordingly, all of the titles used in the original EI were sorted into the six major categories: (a) Children's stories, animal stories, humor; (b) sociology, history, civics; (c) "how-to," self-improvement, jobs, health; (d) religion; (e) sports, adventure, travel; and (f) science. Titles were added to those categories not evenly represented. These titles were then randomly sorted so that subject areas were equally and systematically represented. In all instances, titles were fictitious and were constructed to represent as nearly as possible only one of the above categories.

A consistency check was made among the six professional staff members involved in the testing. The results of this consistency check showed that 75% of the items were categorized similarly by all six of the staff, an additional 18% of the items were categorized similarly by all of the staff except one, and four more titles were categorized similarly by all except two staff members. (See Table 1.)

Table 1
Consistency of Subject Representation of
Book Titles
As Judged by Six Professional Staff Members

No. of Titles Similarly Categorized by Staff Members	%	Staff Members Concurring
45	75	6
11	18	5
4	7	4
60	100	

In March, as review was made of the EI's gathered, items were clarified with the examiners so that administration and scoring of the instrument could be as uniform as possible. These included: (a) Being sure that the subject knew that the question "By whom were you raised?" meant whom they lived with as children. Answers indicated that the subject may have lived with both parents but answered "Mother" only when questioned--an answer with interesting social implications, perhaps, but not the data sought in this particular question. (b) Stressing levels at which each brother and sister was reading rather than just recording the highest reading level of brothers or sisters. Thus, if the subject was one of a family of ten children the reading performance of his siblings might have been recorded as follows: three sisters were able to read letters; two were able to read the Bible; two brothers were able to read and write name only; two were able to write letters; none were able to read the Bible. It was felt that getting the information in this fashion provided a better picture of the true reading climate of a family rather than just getting highest reading level of all brothers and highest level of all sisters. (c) Scoring of the EI room maps. As the room maps were viewed it was seen that both the number of objects and the relationships of the objects would need to be considered. Accordingly, a system was devised whereby subjects received credit for: a certain minimal number of objects included in each map; the quality of understanding of relationships between those objects; a total number of objects included which could allow extra credit to those who included more than the minimal number of objects; and a total of these three scores. Detailed discussion of the criteria by which these room maps were scored is included in the Appendix.

Visual testing. The short form of the Keystone Telebinocular Visual Survey was administered to the subjects in order to determine those who would not have been able to learn to read because of severe difficulties with nearpoint vision. The Keystone short form provides a pass/fail test for hyperphoria, nearpoint fusion, and usable vision with both eyes tested individually and together.

The Keystone test is estimated to screen 75% of those needing visual correction. As a rough screening measure it is considered to be far superior to the Snellen chart and at least as good as any in its particular field. Administration takes approximately five minutes.

Achievement testing. The Stanford Achievement Test (SAT), Primary 1 Battery, is a commonly used test for grades 1 and 2. It is designed for administration to children's populations but is often used with adult populations as well.

The SAT in any of several forms was accepted as the pre- and posttest criterion measure for the predictive variables. Since it has been the practice of the Buffalo Adult Basic Education Program to administer two subtests of the SAT, Word Reading and Paragraph Meaning, with the resulting subtest scores averaged to give what is then called an average reading score, this procedure was followed in the research testing to identify the sample population. Students scoring below a 3.0 level as a mean score for the two subtests were classified as illiterates and were identified for further testing with the sample population.

Initial tests were administered by classroom teachers. Posttesting was carried out by the research staff, often with the assistance of the classroom teacher.

Achievement testing for the first year's study took place in October of 1966. Posttests for that year were administered when each class completed 200 hours of instruction. Because the standardized reading testing was done in different schools by school personnel, it was difficult to control the forms of the SAT, and, as a result, there were eight different forms used during the term of the project.

Collection of the data. Collection of the data for the study of adult city-core illiterate characteristics began in the latter part of October, 1966 and continued on through the month of July, 1967. Data were collected in Buffalo in schools 6, 18, 41, 53, Woodlawn, and the adult literacy pilot program at 98 Winspear Avenue. In Niagara Falls the schools were the 13th Street School and the 93rd Street School.

The data collected for the adult city-core illiterate control group were gathered from schools 6, 18, 41, 53, 82, Woodlawn, and Bennett adult education classes where the students were working on at least a 7th or 8th grade level. The comparison group data for the child city-core-beginning readers were gathered from first grade classrooms in schools 41 and 53, while the child non-city-core-beginning readers were tested in schools 64 and 66. Data for all control groups were gathered in the spring of 1968 within the Buffalo public school system.

The two screening measures were the Stanford Achievement Test, Word Reading and Paragraph Meaning sections, Primary 1 Battery, and the Keystone Telebinocular Visual Survey. The SAT was administered by the regular staff of the Buffalo and Niagara Falls adult education division. Personnel are selected in both these systems to do the necessary testing at 100-hr. intervals of instruction. In a few cases in Niagara Falls an instrument other than the SAT was used to measure reading growth. In those cases the regular instrument employed by the school district was used to ascertain reading level for the research project.

The Telebinocular Visual Survey was administered individually to the subjects. The short form of the test was given to test nearpoint hyperphoria, nearpoint fusion, usable vision with both eyes singly and together. In two cases, one-eyed individuals were included in the study because it was felt that although the binocular test was not applicable to them they had sufficient vision to be able to learn to read, which of course was the purpose for the visual screening.

The experimental data were gathered from the administration of the WAIS, the LAIS, the DEG and the EI. The first two of these, the WAIS and LAIS, were administered individually to various subjects. It was necessary to train the research staff in the administration of these instruments. This was done at the beginning of the research project in October of 1966. The EI was similarly administered as an individual measure although no special training was necessary on the part of the administrators before giving the test. The DEG was a group test which was administered to small groups of the students at a time. It was found to be extremely helpful to have one administrator for each seven or eight students when administering the DEG due to the difficulty of certain portions of the test. The arithmetic subtest was particularly difficult for the students and directions had to be continually clarified.

Three research assistants, the research associate, and the director of the research project were involved in the administration of all tests except the SAT. Insofar as possible, the individual measures were parcelled out to members of the research team in such a way that they might become proficient in their administration. Three members of the research staff were graduate students, all having considerable experience working with disadvantaged people. The research director and research associate were staff personnel at the State University of New York at Buffalo, both having had experience in test administration, in clinical work, at various reading centers, and at reading clinics.

All data were recorded for a visual survey and later punched for submission to computers in the University Computer Center.

A number of problems were encountered in the collection of the data in regard to intermittent attendance on the part of the subjects. It was not at all uncommon to complete most of a test, only to have the subject absent for the next two to four weeks before the test could be completed. Some tests had to be left incomplete because of dropouts.

The data from all subjects were included in the study even though certain test scores were missing. The data were processed by using a pairwise correlational routine (Missing Data correlation routine#NYBMSX) to allow the inclusion of all subjects. This particular program was made available through the State University of New York at Buffalo Research Computing Center.

The length of time it took to administer the full number of tests posed something of a problem in the first school in which the research team began to work. In part this was due to the newness of the team in handling the tests, but the tests were nonetheless quite time consuming. Some of the subjects expressed a reluctance to complete the testing sessions. It was found necessary to shorten the Experience Inventory and to take whatever steps were necessary to shorten the total time of administration for all of the measures without doing damage to the collection of important data. The success of the efforts were testified to by lack of difficulty regarding length of test administration in other schools.

No very sophisticated statistical treatment was necessary for the analysis of the data which were received from the initial portion of the research project. Since this first portion of the study is to describe the people who live in the city-core area in terms of their identity, their performances, their knowledges, and their interests, an attempt was made to set out the data in tabular form including both raw scores and percentages.

Obviously related to this is the comparison between the experimental and the control groups.

Control Population

The experimental population was compared with control groups composed of 96 adult city-core literates, 113 children from the city-core area who had completed approximately one year of reading in the first grade, and 94 children from fringe or suburban areas who had completed approximately one year of reading instruction in the first grade, on the basis of responses to the Experience Inventory.

The Experience Inventory was revised for use with the control samples, retaining sections dealing with the subjects' familial background (parent(s) or parent-surrogate(s) in the childhood home, number of siblings), home reading environment (the reading ability of the various members of the childhood family, whether or not any member of the childhood family read to the subject regularly, and, in the case of the adult samples, the reading ability of the present family, and whether or not they read to the subject regularly), functional knowledges (the ability to interpret a simple map, right-left orientation, directional orientation, and temporal measures such as days in a week, months, and seasons in a year), and reading interests measured through the matched choice instruments with responses representative of various interest areas. Obviously, it was necessary to change the format of the presentation for administration to children. When possible, questions were pictured rather than written, writing was typed in primer type, and place markers were provided for the first grade subjects. The most important change, however, was that the control samples were given a group rather than an individually administered instrument, a saving for both subjects and staff.

It was the opinion of the research staff that the results of the group administration were valid measures of the areas tested except for those questions which dealt specifically with children's perceptions of the ability of their parents to read, and their report of how often parents or siblings read to them. Data gathered from certain portions of the Experience Inventory submitted to the control population were placed in tables for ease of contrast with experimental population data.

Methodological Study

Purpose

The purpose of the methodological study was to test whether or not it was possible to increase the learning rate of adult illiterates over that customarily expected, and specifically over that evidenced by the control classes. In order to do this the initial teaching alphabet was used as a teaching medium, adult-interest materials were used (constructed to provide proper pacing for adult learning rates), and teacher training and consultant help was made available. It was not the purpose or possibility of this exploratory research to identify precisely which variable was responsible for gains. However, in looking at these four highly interrelated variables the hope was to see whether any combination of variables might be able to increase the learning rate of the adult basic education classes reading at such very low levels.

Sample

The experimental sample for the methodological study was drawn from the same general pool of students as the initial portion of the study. These were all adult city-core illiterates reading at less than third grade level. Although the initial number of the research sample had been proposed as 60, only 58 students were enrolled. Twenty-seven of these completed pre- and posttesting. There was a total of three classes in two schools--41 and Woodlawn--all three of which met during the evening hours. Both schools are in the city-core area and each has offered adult basic education classes for several years. The selection of the classes was based on the following considerations.

All of the adult basic education teachers whose students had been included in the testing during the first year of the study were invited to participate in three pre-service meetings scheduled for September 28, 29, and 30, 1967. Based on their interest and willingness to participate, four teachers were to be chosen. Eight teachers responded to the initial invitation to attend these meetings.

At the last pre-service meeting all of the teachers were asked to place their negative or positive indication of participation in an envelope marked with their names so as not to influence each other's decision. After the staff had examined these responses it was found that six teachers were willing to join in the research. (One teacher could not because her students were now beyond the point where i. t. a. was needed. Another indicated a very heavy daytime schedule but said she would be willing to participate if needed.) Since the previous totals of these six classrooms equalled the number of students sought in the study, i. e., 60, it was decided to include all six teachers. Later, however, two teachers from one school were dropped; one because her principal felt that the spread in her class would be too great to accommodate the new alphabetic medium, and the second because the teacher preferred not to teach the basic classes. A third teacher, who was scheduled to participate in the classes until well into November, was ultimately not able to do so because of shifting enrollments within his school. Finally, therefore, three teachers with a total enrollment of 39 worked with the new materials and method.[1]

Inclusion of students in the program thus became a practical consideration in which all students were selected whose teachers were able to participate in the program. Table 2 describes in greater detail some of the demographic characteristics of the subjects involved in the second year study.

Teaching Medium - i. t. a.

The principal variable in the treatment of the experimental population was the use of the initial teaching alphabet as an alphabetic medium. Since such a medium had not been used in the Buffalo Public Schools in the adult education division, it afforded the possibility of as clear an experimental contrast as possible. The i. t. a. further recommended itself because it greatly lessens the need for teaching phonic rules and principles. Its inbuilt cue consistency generally uses one grapheme for each phoneme of the English language. Research done with children has indicated that it is possible to move to a more sophisticated level of material more quickly when using the i. t. a. These advantages seemed significant in the choice of the i. t. a.

Various difficulties were encountered in using the i. t. a. Many materials had to be written, transliterated, and produced; teachers had to be trained in the use of the new medium; and the students had to be conditioned to the unusual appearance of the i. t. a. symbols.

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[1] The eventual second-year enrollment of 58 was achieved as new students enrolled in the three classes throughout the year.

Adult-centered Materials

There are two different philosophies involving the use of the initial teaching alphabet. One, associated with Sir James Pitman and Albert Mazurkiewicz, makes special use of the Early-to-Read Series in the United States. The other school of thought is that of Dr. John Downing, who has been associated in this country with i. t. a. experiments conducted by the University of Chicago and the University of Missouri. The research project at the University of Missouri, conducted by Heding, Ames and Artley, produced a basic language program for adults in the initial teaching alphabet. This became available during the summer of 1967, and seemed appropriate for the Buffalo i. t. a. experiment. This added a second variable, however. These Missouri Materials were adult-oriented whereas some of the materials used with the control groups were child-oriented.

Pacing

It became obvious after beginning to use the Missouri Materials that a broader horizontal program was needed for the Buffalo population. Additional materials were produced to properly pace the program for the adult learner. This introduced a third variable, proper pacing, not a consideration during the instruction for the control groups using the more standard materials.

Teacher-training and Consultation

In order to make use of the i. t. a., teacher training and consultation were necessary throughout the course of the experimental classes, thus introducing an additional variable, assistance and instruction for the teachers, which had not been available to the control groups.[1]

Testing

The Stanford Achievement Test, Word Reading and Paragraph Meaning subtests, was administered to the subjects at the beginning of their instructional period, at the end of 100 hours of instruction, and again at the end of 200 hours of instruction. These objective data as to the gains made by the experimental sample were augmented by four more subjective measures of improved reading ability. The first of these was the observation on the part of the consultants as to the performance of the students of the various classes. The second was the use of a tape-recorder to record various class members as they read at the beginning of the year and again toward the end of the year. A third measure was the estimation on the part of the classroom teacher as to the progress which had been made, and the last was the reaction by the various students as they were interviewed at the end of the year.

Limitations

As has been previously mentioned, the problem of intermittent attendance caused a good deal of difficulty and disruption in the methodological study. Adult Basic Education classes usually are operated on a continuous enrollment policy which means that the students may enter at any time. This meant that in some extreme cases a student might enter the research class at the 150-hr. point rather than starting at the beginning of the 200-hr. period of instruction. Furthermore, students drop out of the adult basic education classes frequently with little feedback to teachers or supervisory personnel as to the reasons. In the future, some means for handling both of these situations needs to be implemented so that willing enrollees are not put off either by fear as they enter the classes or lack of interest if they need to drop out for a short time.

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[1] See Appendix for detailed description of pre-service and in-service training.

Another limitation was the achievement tests used. The tests are child-oriented and use vocabulary normally found in the basal readers. When these tests were used to test the performance of the illiterate subjects working in materials at an adult-interest level and using adult vocabulary, it was the opinion of the research staff that the tests were inadequate to measure reading growth. An item analysis of one of the posttest measures revealed eight items which were unduly difficult for the city-core adult illiterate population. Some of the difficulty lay in variation in regional pronunciation, and others lay in the ambiguity of the related illustration. Although the difficulty was not so marked with the paragraph-meaning portion of the test, there were three alternate choices which the research staff agreed were unsatisfactory in considering the linguistic needs of the adult illiterates in this study. In all then, the experience with the juvenile standardized achievement tests points strongly to the need for using standardized tests aimed at adult populations.

Data Analysis

Mean test differences of pre- and posttest results were compared to similar differences made by the control group. These differences were t-tested for significance at the .01 level of confidence. The subjective measures were not statistically treated but will be presented in tabular form in Chapter IV.

Materials Production

A number of materials were produced in the course of the study including 30 pages of comprehension exercises, 61 pages of 'stories,' 27 pages of visual discrimination exercises, 25 pages of 'wider reading,' 20 pages of songs, and 49 pages of adapted reading from such sources as the Bible, biographies of famous people, poems by Langston Hughes, and miscellaneous selections. A total of 212 pages was produced in addition to those provided in the original Missouri Materials.

Study of Predictive Variables

The same experimental population was used for this portion of the study as for the first portion of the study related to adult city-core illiterate characteristics. The SAT in any of several forms was accepted as pre- and posttest criterion measures for the predictive variables. The initial tests were administered by classroom teachers. Posttesting was carried out by the research staff often with the assistance of the

the classroom teacher. Pretesting for the first year's study took place in October of 1966. Posttests for that year were administered when each class completed 200 hours of instruction. The pre- and posttests for the second year's methodological study were administered in October, 1967 and May, 1968 respectively.

During the first year study the same measures of potential--the WAIS, LAIS, DEG, and EI were given. Correlations were computed between the variables derived from the instruments and reading success measured by the Stanford Achievement Test, Word Reading and Paragraph Meaning subtests, and also measured by teacher estimation of the ability of the students to profit from reading instruction. This data is presented in Chapter IV.

A regression analysis was then run to determine which combination of variables was most predictive of reading success. The variables were weighted to increase the predictive value of the regression equation. A great number of delays were encountered in the computation of the regression analysis due to difficulties with programs, with computer time, with missing data, and due to a major relocation of the computer center during the time that the treatment of data was being carried on. A computation of the regression equation by hand would have been insurmountable and it was necessary to rely on the computer to handle the 40 variables which were submitted in order to select the best possible combination of weighted variables for predictive strength. These unforeseen difficulties surrounding the development of the regression equation caused a change from the original plan which had been to validate the regression equation derived from the original sample of 207 subjects on the second year's methodological sample of 60 subjects. The preparation of the regression equation was delayed until it was too late to test the 58 students who had been involved in the second year of the methodological study.

Chapter IV: Findings and Analyses

As the study drew to a close, it became clear it would be inadvisable to include all findings in the report for fear of inundating the salient features with peripheral figures and statistics. Instead, the attempt here will be to relate only those findings most critical to the main thrust of the investigation.

The chapter's outline follows the same headings as those used in the study's overall scheme, i. e.: Common Characteristics of Adult City-core Illiterates, Methodological Study, and Identification of Predictive Variables.

Study of the Common Characteristics of Adult City-core Illiterates

In this segment of the study the Experience Inventory, WAIS, LAIS, and DEG were used to describe the common characteristics of the adult experimental sample. They were identified as illiterates on the basis of their performance on the SAT Word Analysis and Paragraph Meaning sections, which when combined gave a mean score of less than third grade level. They were then screened with a Keystone Telebinocular test in order to ascertain if they were able to see well enough to be able to learn to read.

Experience Inventory--Experimental Population

The Experience Inventory was completed by 157 subjects. Certain portions of the inventory were completed by larger numbers of subjects, and items under the identification and description were filled in for 202 of the 207 subjects in some instances.

General identification of subjects. The information contained in Table 2 indicates that the average age of the subjects was 46.6 years,

Table 2
Demographic Characteristics of Sample:
Number, Age, Mean Number of Years in Buffalo Area.

Descriptive Data	Results
N[a]	207[b]
Average age	46.6 (S.D. = 12.2; range = 18-81)
Average number of years living in this area[c]	17.4

Note.--EI question on which these data were based: "How long have you lived in this area?

a--N designates total number of respondents in this and all following tables.

b--110 male; 97 female.

c--See Appendix for more complete data.

which points up the difference between this population and that of the usual Job Corps Center, or some of the Manpower Development Training programs aimed at school dropouts and youthful illiterates. The population of this study is notable for its maturity. Although the range of the population was from age 18 to age 81, the standard deviation of 12.2 indicated that the major portion of the population lay from 34 to 58 years of age, not notable for clusters at either end of the age scale.

It might be noted that this population represents an age at which jobs become more difficult for those with a poor education. It seems likely that this and similar groups have felt the economic pinch that falls upon the illiterate when he loses his job because of faltering physical ability in his middle-age years. This is more true of men than of women in the population.

The women, for example, may have begun literacy training at an age when children no longer demanded care at home. Some women attending classes, however, either made arrangements for leaving their children at home, or on rare occasions, brought the children to school with them. Nevertheless, in many cases family obligations had somewhat lightened.

An additional finding in Table 2 indicates that the mean number of years in this area was 17.4. This would seem to indicate that the population being trained did not recently immigrate to this part of the country nor immediately seek literacy training. For the most part they were in this area for some time before looking to the school district or to other agencies for help in gaining literacy. This contradicts the opinion that the ABE classes are peopled by recent immigrants from the southeastern part of the United States.

Birthplace of sample. It becomes obvious through reference to Table 3 that the major portion of the population came from the south. Only four percent of the population came from non-English speaking countries. This proportion would undoubtedly have been higher except for the stipulation that the study be restricted to those who were able to speak English sufficiently well to take the WAIS, LAIS, DEG, and EI. It is of considerable interest to note that 95% of the sample was born in parts of the country other than the east, even though the average number of years in residence was over 17.

Table 3
Demographic Characteristics of Sample:
Birthplace of Subject

Sex	Regions					
	South	East	Non-English Country	Southwest	Middlewest	Northeast
% of male	86	7	4	2	1	0
% of female	93	2	4	1	0	0
Combined %	89	5	4	2	1	0
N	151	8	7	3	1	0

Note.--EI question on which these data were based: "Place of Birth?"

Table 4 shows 85% of the men and 72% of the women to have been reared by parents or step-parents, leaving some 15% of the men and 28% of the women to be reared by other than parents. The girls, more than the boys, seem to have been reared more frequently by friends or unusual combinations of adults.

Table 4
Demographic Characteristics of Sample:
Who Raised the Subjects

Sex	Parent(s) or Surrogate						
	Parents	Step-parent & par't	Grand-parent(s)	Aunt & Uncle or Cousins	Sisters & Bros.	Friend	Misc.
% of male (N=91)	79	6	6	2	2	0	4
% of female (N=83)	67	5	4	5	0	5	13

Note.--EI question on which these data were based: "By whom were you raised?"

Table 5
Demographic Characteristics of Sample:
Did Subject Have All He Needed to Eat?

Frequency	Responses		
	% of Men (N=87)	% of Women (N=81)	Combined % (N=168)
Always	68	63	65
Usually	24	22	23
Seldom or Never	8	15	12

Note.--EI question on which these data were based. "Did you have all you needed to eat? (always - usually - seldom - never)"

As shown in Table 5, when the subjects were asked if they always had enough to eat, 65% replied affirmatively. Twenty-three percent indicated they usually did, while 12% said they seldom or never did.

There is little way of knowing the general quality of diet available to the subjects, the amount of protein, for example. In interviews held during the end of the second year of the study, most subjects indicated they usually had meat from chickens, hogs, or cattle, and that vegetable gardens were common around their homes. If quality of diet were considered, it is possible even a higher number than the 12% who recall seldom or never having enough to eat, may have suffered from malnutrition when youngsters.

Childhood reading environment. When subjects were asked how well members of their immediate families were able to read, their responses showed (Table 6) that there were no significant differences between the reading abilities of their fathers and mothers. The figures reflected, however, that the sisters learned to read better than the brothers. The

Table 6
Subject's Childhood Reading Situation:
Reading Ability of Immediate Family

Family member	Subject's judgement of family's ability to read		
	% of Men	% of Women	Combined %
A. Mother	N = 69	N = 56	N = 125
(1) Read & write name	15	25	20
(2) Read & write letters	4	0	2
(3) Read from the Bible	81	75	78
B. Father	N = 44	N = 30	N = 74
(1)	18	20	19
(2)	2	3	2
(3)	80	77	79
C. Sisters	N = 70	N = 57	N = 127
(1)	3	5	4
(2)	3	4	3
(3)	94	91	93
D. Brothers	N = 66	N = 52	N = 118
(1)	15	17	16
(2)	3	4	3
(3)	82	79	81
E. Other	N = 10	N = 16	N = 26
(1)	10	19	16
(2)	0	6	4
(3)	90	75	81

Note.--EI question on which these data were based: "About how well were the members of your immediate family able to read? Read and write name, Read and write letters to people, Read passages from the Bible?"

subjects indicated that 93% of their sisters could read well enough to read passages from the Bible, while only 81% of the brothers could do so.

Table 7
Subject's Childhood Reading Situation:
Relative to Whom Subject Felt Closest

Relative	Responses	
	% of Men N = 42	% of Women N = 36
Father	52	56
Mother	7	17
Other	41	28

Note.--EI question on which these data were based: "To which of the relatives in your childhood home did you feel closest?"

These subjects were also asked to identify the childhood relative to whom they felt closest.[1] Table 7 shows that the closest identification was overwhelmingly with the father. It may be presumed, but not proven, that their identification with the less literate sex may have increased their disinterest or lack of ability to profit from reading instruction.

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[1] This question was added after about half of the EI's had been given. Thus, the great difference in N between this and other tabulations.

Table 8
Subject's Childhood Reading Situation:
Reading Level of Relative to Whom Child Felt Closest

Reading level of relative	Subject's judgment of relative's reading ability	
	% of Men (N = 51)	% of Women (N = 39)
Read & write name	22	23
Read & write letters	0	8
Read from the Bible	78	69

Note.--EI question on which these data were based: "What was the reading level of that person? Read and write name; Read and write letters to people; Read passages from the Bible?"

A related question asked the reading level of the person to whom they felt closest. Twenty-two percent of the men and 23% of the women indicated they felt closest to a person who was only able to read and write his own name (Table 8). Seventy-eight percent of the men and 69% of the women indicated they identified with a person who was able to read from the Bible.

Table 9
Subject's Childhood Reading Situation:
Chief Cause of Reading Difficulty

Sex	Subject's Judgment of Causes of Reading Difficulty										
	Needed at home	No school available	Financial had to work	Illness	Ability	Personal disinterest	Parental disinterest	Foreign born	Poor teaching	Misc. or inappropriate	Total
Male	54	11	14	6	5	6	5	4	2	3	110
Female	34	13	9	10	7	5	4	2	1	10	95
Combined	88	24	23	16	12	11	9	6	3	13	205

Note.--Multiple responses were permitted.

Note.--EI question on which these data were based: "What was the chief cause of your reading difficulty: a. personal disinterest, b. parental disinterest, c. no school available, d. poor teaching, e. illness, f. needed at home, g. miscellaneous, h. foreign-born."

Subject's judgment as to his chief cause of reading difficulty. A tabulation of the subjects' assessment of the cause for their illiteracy appears in Table 9. An examination of the table indicates some interesting findings. The chief reason cited by the sample as causative of their reading problems was that they were needed at home. Eighty-eight out of the 205 gave this as a reason why they had not continued on in school. Almost as interesting is the lack of indication that poor teaching caused the reading difficulty. It seems likely, however, that their deprived background would make it impossible for them to assess adequately the reading instruction carried on in the school. But even beyond this, there appears an obvious lack of desire on the part of the subjects to attack the schools as the cause of their literacy problems. More of them indicated "no school available" rather than "poor teaching" as being responsible for their difficulties. As a matter of fact, the next largest category after "needed at home" was "no school available" which 24 subjects out of 205 selected as their reason for illiteracy. Twelve subjects said they lacked the ability to learn to read, and 11 indicated that when they were children they were uninterested in reading.

Generally, however, the subjects saw economics as the cause of their illiteracy--either they were needed at home or they had to work. Together these reasons accounted for over half the total responses.

A breakdown between the sexes shows that the men more than the women were subject to the economic pressure of either having to work or being needed at home. Sixty-eight males indicated one or the other of these categories, while only 43 females did so. On a percentage basis, this means that 62% of the men cited these pressures as opposed to 39% of the women.

Table 10
Subject's Present Reading Situation:
Reading Ability of Those in Present Family Situation

Answers	Responses	
	% of Men (N = 91)	% of Women (N = 83)
Yes	66	59
No	34	41

Note.--EI question on which these data were based: "In your present family situation, can anyone read?"

Present reading environment. When the subjects were asked if anyone in their present family situation was able to read, 34% of the men and 41% of the women indicated that no one was able to do so (Table 10).

Of the 66% of the men who indicated someone could read, 45% responded that their spouse could read, and 35% said they had a child who could read (Table 11). The women, on the other hand, indicated that only 17% of their spouses could read, and 45% indicated they had a child at home who could read.

Table 11
Subject's Present Reading Situation:
Identification of Those Who Can Read

Reader	Responses			
	N	% of Men (N = 91)	% of Women (N = 82)	Combined % (N = 173)
Spouse	55	45	17	32
Children	69	35	45	40
Other relatives in home	19	12	10	11
Other	19	15	6	11

Note.--EI question on which these data were based: "In your present family situation, can anyone read? Who?"

Note.--Multiple responses were allowed.

It is difficult to assess the statistics sufficiently so as to understand the meaning of the 17% male spouses who could read. It is possible that this low figure is partially due to the large proportion of women in the sample population who live without a husband. Even if this accounts for a sizeable number of the cases reported, the illiteracy among male spouses is extremely high.

Table 12
Subject's Present Reading Situation
How Often Subject is Read To

Frequency	Responses		
	% of Men (N = 91)	% of Women (N = 83)	Combined % (N = 174)
Much	25	24	25
Seldom	29	25	28
Never	46	51	48

Note.--EI question on which these data were based: "Do they read aloud to you?: Much, seldom, never?"

This question was followed by one asking whether or not any of those living in the home read aloud to the subjects. Twenty-five percent of the men and 24% of the women indicated that they were often read to, but 46% of the men and 51% of the women indicated they were never read to by other members of the family (Table 12).

The next item on the Experience Inventory asked what materials were read to those subjects who indicated they had other members of the family who read to them on occasion. As shown in Table 13, 23% indicated they were read to from the newspaper, 20% from the Bible, and 18% from books, while 13% indicated school books, and 10% magazines. Other items read to them included mail and letters.

Table 13
Subject's Present Reading Situation: What is Read to Subject

Materials Read	Responses			
	N	% of Men (N = 91)	% of Women (N = 83)	Combined % (N = 174)
Newspaper	40	27	13	23
Bible	34	19	15	20
Books	31	14	17	18
School Books	23	8	15	13
Magazines	18	10	8	10
Mail, letters & misc.	18	12	6	12

Note.--Respondents could select more than one category. Figures above often represent multiple responses.

Note.--EI question on which these data were based: "What do they read to you?: Newspaper (sports, funnies, news, ads, other), Bible, Magazines, Books, other."

Why subjects wanted to learn to read. The subjects were also asked why they wanted to learn to read. The question was open-ended. In organizing the responses afterwards (see Table 14), it seemed apparent that most could be categorized as: (a) In order to get a job, (b) to read the Bible, (c) to read to children, (d) to get more education, (e) to read newspapers or travel, (f) to learn special skills, or (g) other. The largest category of responses included 43% of the subjects who chose to indicate their reason for wanting to learn to read as the opportunity to get more education. Another large number, some 30%, suggested they wanted to learn to read in order to learn special skills. Twenty percent wanted

Table 14
Subject's Present Reading Situation: Reasons Why Subject Wanted to Learn to Read

Reasons	Responses			
	Men (N=91)	Women (N=83)	Total	Combined % (N=174)
To get more education	43	32	75	43
To get a job	31	22	53	30
To learn special skills	24	25	49	28
To read newspapers & for travel	14	20	34	20
To read the Bible	7	11	18	10
To read to my children	3	8	11	6
Other	19	8	27	16

Note.--Respondents could select more than one category. Figures above often represent multiple responses.

Note.--EI question on which these data were based: "Why do you want to learn to read?" (to get a job; to read the Bible; to read to my children; to get more education; for pleasure; to understand the news/to be better informed; other.)

to read the newspapers, and for travel information. Ten percent wanted to read the Bible. Six percent wanted to learn to read in order to read to children, and 16% selected some miscellaneous category.

The combining of the three most notable responses indicated that they wanted to learn to read in order to be better educated, to get a better job, and to learn special skills--all highly utilitarian responses.

Parents' occupation. The subject was asked the occupation of his parents, and the responses were categorized in terms of the language involvement of the occupations supplied. As shown in Table 15, 56% of the men and 68% of the women indicated that their parents were employed in occupations in which there was little language involvement. A total of 61% of the subjects indicated that their parents had been involved in such occupations as farming, fishing, trapping, or logging, in which there was little chance of communication or practice in conversational skills with other individuals.

Table 15
Jobs Held by Subject's Parents:
Categorized by Degree of Language Involvement

Degree of language involvement	Jobs held by parents - subjects' responses		
	% of Men (N = 88)	% of Women (N = 80)	Combined % (N = 168)
Little	56	68	61
Some	28	16	23
Much	16	16	16

Note.--The categories "little,""some," or "much" represent the amount of language involvement in jobs such as: farming, fishing, logging, etc., -- (little); labor, machine operation, carpentry, mechanic, etc.,--(some); service--cook, nurses' aid, hospital orderly, etc.,--(much).

Note.--EI question on which these data were based: "Occupation of Parent(s) or Guardian (indicate for each when given): father, mother, other?"

Some 28% of the men and 16% of the women indicated that they had parents who were occupied in lines of employment which included some language involvement. Sixteen percent of both men and women indicated they had parents who had been employed in occupations providing much language involvement. This usually meant service employment such as housework, working as a porter on the railroad, or some other occupation in which conversational skills and language development were important.

Jobs held by subjects. Subjects were then asked what sort of jobs they had held. The responses were again categorized in terms of little language involvement, some language involvement, and much language involvement (Table 16). It is interesting to note that although the parents were largely employed in occupations needing little language involvement, the major portion of the male subjects were involved in some occupation which necessitated some language involvement. When tabulated in terms of the

Table 16
Jobs Held by Subject:
Categorized by Degree of Language Involvement

Degree of language involvement	Total no. of all jobs held by subjects[a]		
	Men (N = 89)	Women (N = 78)	Total (N = 167)
Little	7	3	10
Some	83	42	125
Much	20	53	73

Note.--EI question on which these data were based: "What kind of jobs have you had?"

[a] The figures entered under total number of jobs held columns represent a composite of jobs held by any given subject rather than number of subjects holding a particular type of job.

terms of the highest category of jobs held by each of the subjects (Table 17), only 1% of the men and 3% of the women indicated that the highest job they had held had been one in which there had been little language involvement. Some 76% of the men and 29% of the women indicated that they had been involved in some occupation where there was some language involvement, and 23% of the men and 68% of the women indicated they had been involved in occupations in which there was much language required. It seems obvious that the adult city-core illiterate has had to make a major change in occupation in contrast to the occupation held by his parents. He now finds himself employed in positions in which a large amount of language involvement is needed.

Table 17
Highest Category of Jobs Held by Subject:
Categorized by Degree of Language Involvement

Degree of language involvement	Results		
	% of Men (N = 89)	% of Women (N = 78)	Combined % (N = 167)
Little	1	3	2
Some	76	29	55
Much	23	68	44

Note.--EI question on which these data were based: "What kind of jobs have you had?"

Possessions, functional knowledges, and general knowledges. A subject's possessions and his ability to make use of those possessions were considered in the Experience Inventory. Also, the subject's ability to obtain information from his environment and some general knowledges were explored. It was felt that findings from these areas might be of value not only in identification of common characteristics, but also in the development of predictive variables. The results from these portions of the inventory are explored in the following section.

Table 18
Possessions: Percentage of Sample Who Owned Radio, TV, Telephone, Phonograph, Car

Possession	Response		
	% of Men (N=91)	% of Women (N=83)	Combined % (N=174)
Radio	83	90	86
TV	76	85	80
Telephone	66	66	66
Phonograph	53	48	51
Car	37	17	26

Table 18 presents the findings regarding subject possessions. Sixty-six percent of both men and women indicated that they had a telephone.

All subjects were asked whether or not they knew what to do if their telephone was out of order. Table 19 indicates that 82% of the men and 84% of the women made an adequate response in indicating they would contact the telephone company. It would seem that for an adult illiterate to use the telephone it would be necessary for him to make use of the operator and to call information, since he cannot read the numbers from

Table 19
Functional & General Knowledges:
Percentage of Sample Who Gave Correct Responses on Functional and General Knowledge Questions of the Experience Inventory

Functional or General Knowledge Examined	Responses		
	% of Men	% of Women	Combined %
Ability to handle malfunctioning telephone	(N=91) 82	(N=83) 84	(N=174) 83
Knowledge of commonly used telephone nos.:	(N=88)	(N=82)	(N=170)
information	56	62	59
operator	52	65	58
Knowledge of approximate cost of car insurance[a]	(N=91) 75	(N=83) 42	(N=174) 58
Correct knowledge of phonograph speeds	(N=91) 50	(N=83) 45	(N=174) 47
Correct knowledge of refrigerator temperature	(N=91) 17	(N=83) 10	(N=174) 13
Knowledge of where to borrow money	(N=91) 96	(N=83) 96	(N=174) 96
Displayed correct time orientation:	(N=90)	(N=83)	(N=173)
days in the week	81	65	73
months in year	84	80	82
seasons in year	42	41	42

Note.--See Experience Inventory in Appendix for questions on which these data are based.

[a] \$100-\$400 per year accepted as adequate response.

a telephone book. Therefore two items were included in the test of general knowledge: (a) What number would you call for information?, and (b) What number would you need to call the operator? As represented in Table 19, approximately 56% of the men and 62% of the women indicated that they knew the correct number to call for information. Fifty-two percent of the men and 65% of the women indicated the correct response for calling operator. Since 65% of both men and women had earlier indicated that they had a telephone, it is interesting to note that 41% could not recall the number to dial for information, and 42% could not dial the correct number for operator. The testing situation itself may explain this peculiarity. If the subjects were actually placed in the position of dialing the telephone rather than having to recall the numbers from memory they might have performed differently.

Twenty-six percent of the subjects were found to possess a car (Table 18). When asked how much annual car insurance might be expected to cost, 75% of the men and 42% of the women made reasonable estimates (Table 19).

When the subjects were asked whether or not they owned a television set, 76% of the men and 85% of the women indicated that they did have a set (Table 18). Eighty-three percent of the men and 90% of the women also indicated they had a radio. To check their functional knowledge relative to television or radio, they were asked whom they would call to complain to if they felt that a TV or radio program was bad, that is, that it might hurt or offend someone. The breakdown of data as indicated in Table 20 shows that a sizeable number of both men and women, even when pressed to do so, would not risk the perceived dangers in registering a complaint.

Table 20
Functional Knowledge: Percentage of Sample
Who Responded to How to Handle Bad Radio or TV Program

Nature of Response	Results	
	% of Men (N=91)	% of Women (N=83)
Would not object	20	18
Contact station - radio or TV	12	16
Inappropriate response	9	11
Contact someone outside home	7	11
Don't know	42	27

Note.--EI question on which these data were based: "If you felt that a TV or radio program was bad; that is, that it might hurt or offend someone, whom would you call to complain to?"

Another possession examined was the record player. Some 53% of the men and 48% of the women indicated they did have a record player (Table 18), but when asked at which speed they usually played their record player, half the men and less than half of the women were able to indicate any one of the customary phonograph speeds such as 33, 45, or 78 (Table 19).

Originally subjects were asked whether or not they had refrigerators. It turned out, however, that virtually every subject either had a refrigerator or had some arrangement in which he was able to use the refrigerator. So the response to this particular possession item was deleted and the functional knowledge question which was included asked: "Approximately how cold in degrees does the non-freezer part of the refrigerator get?" A range of 32° to 50° was accepted as adequate. Only 17% of the men and 10% of the women gave an adequate response (Table 19). Many unusual responses were given which indicated a logical approach to the question but inadequate information on which to base a proper response. Some replied that since 100° hot was very hot, they would suppose that since it was quite cold in a refrigerator, it was probably 100° cold!

Although almost everyone owned a refrigerator, almost no one owned his own home. Therefore the possession question was deleted and the functional knowledge portion of the item asked where people might borrow the money to buy a house. It was interesting to note (Table 19) that 96% of both men and women were able to indicate that a bank was the logical place from which to borrow the money. Only 4% made inadequate responses.

An important skill in the modern environment is the ability to tell time either in terms of hours, days, months, years, or seasons. The subjects were asked how many days there were in a week. Eighty-one percent of the men were able to respond correctly and only 65% of the women were able to do so (Table 19). Eighty-four percent of the men were able to correctly identify the number of months in a year, and 80% of the women were able to do so. Forty-two percent of the men and 41% of the women were able to identify the number of seasons in the year.

Since certain reading authorities have indicated that rhythm and the ability to tap a particular rhythmic pattern is sometimes associated with ability to learn to read, two simple tapping codes were administered to the students. In the first code two long taps followed by three short taps were given. In the second, two short taps and three long taps were given. Twenty-two percent of the men and 17% of the women were unable to imitate either response correctly (Table 21), while those able to imitate the pattern were 53% of the men and 42% of the women.

Table 21
Functional Knowledge: Percentage of Sample
Who Responded to Rhythm Patterns

Responses	Results % of Men (N=90)	 % of Women (N=83)	 Combined % (N=173)
Neither correct	22	17	20
Correct to A only	16	29	22
Correct to B only	8	12	9
Both correct	53	42	48

Note.--Rhythm Pattern A: Two long and two short taps (LL SSS); Rhythm Pattern B: Two short and three long taps (SS LLL).

Note.--EI question on which these data were based: "Listen to this, and then tap as I have done."

When the subjects were tested to see whether or not they could correctly identify their right hand, 97% of the men and 99% of the women could do so accurately (Table 22). They were then tested to see whether or not they could identify directions. The following set was given them:

Table 22
Functional Knowledge: Percentage of Sample
Who Responded to Various Orientation Problems

Identification Items	Correct Responses		
	% of Men (N = 91)	% of Women (N = 83)	Combined % (N = 174)
Right from left	96.7	98.8	97.7
Direction east	42.9	36.1	39.6
Direction after change of position	44.0	24.1	34.5
Correct route from house to school on small map	74.7	45.8	60.9
Railroad markings on small map	73.6	71.1	72.4
Directions from school to lake on small map	25.3	22.9	24.1
Placement of Buffalo in relation to Canada	80.2	65.9	73.3
Placement of Buffalo in relation to Chicago	48.4	52.4	50.3
Placement of Buffalo in relation to Georgia	80.2	76.8	78.2

Note.--EI questions on which these data were based: "You are now facing north. Point to the right. At which direction are you pointing?"; "You are now facing north. If you were to walk one block, then turn to your left, what direction would you be facing?"; "This is a map of a little town, perhaps similar to the area where you live. Now just suppose you live in this little town. Let's pretend you live here. (pointing) Now show me the way you would most easily be able to get to the school which is here (pointing) on the map. Show me where you think the railroad is located. In which direction would you walk to go from the school to the lake?" "On a map of the United States, would you find Buffalo (pointing) above (North) of Canada, or below it, to the right or left of Chicago, above or below Georgia?"

"You are now facing north, point to the right. In which direction are you pointing?" Only 43% of the men and 36% of the women could correctly identify the direction east in that set (Table 22).

They were next given a set in the following fashion: "You are now facing north. If you were to walk one block then turn to your left, what direction would you be facing?" Only 44% of the men and 24% of the women could correctly identify direction after such a change of position (Table 22).

The subjects were next tested on their orientation to maps and charts. They were given a map of a small town and asked to pretend that they lived in a house in the upper right-hand corner of the map. They were then directed to show the way in which they could most easily get to the school located in another portion of the map (see Appendix). Seventy-five percent of the men but only 46% of the women could correctly identify the proper route (Table 22). They were next asked to indicate the railroad which was given on the map with the traditional crossed-line marking. Seventy-four percent of the men and 71% of the women were able to correctly do so (Table 22). When they were asked which direction they would be walking if they went from the school to the lake shown on the map, 25% of the men and 23% of the women were able to make correct responses.

It may well be that the men could more adequately identify the correct route from the house to the school because of greater experience in driving cars and using maps. However, their knowledge of railroad markings and directions was not particularly better than the women subject's, but they were far better in ability to trace the route on the map.

The subjects were given a map of the United States and Canada and asked to find Canada, Chicago, and Georgia in relation to Buffalo, New York. Eighty percent of the men as opposed to 66% of the women could correctly identify Canada's position. Forty-eight percent of the men and 52% of the women could correctly identify Chicago's position. Eighty percent of the men and 77% of the women could correctly identify Georgia's relative position. The more sizeable number of men who could identify the location of Canada may again be due to the fact that it is within local driving distance, and men may have had greater experience following maps to get to Canada.

Table 23
Functional Knowledge: Percentage of Sample
Who Correctly Responded to Tasks Dealing With Room Maps

N=174

Items	Median number correct responses	Maximum possible score
Identification items	6.0	6
Relationships	3.5	6
No. of Objects	6.5	unlimited
Total score	16.0	unlimited

In the portion of the Experience Inventory in which the subjects were asked to draw an outline of the room in which they were located, and to identify various objects within that room, the number of objects and the relationships of the objects to one another were recorded and tabulated. The median number of correct responses was recorded for the identification of items, the relationships between items, the number of objects, and the total score. These are to be found in Table 23. Several attempts were made to make use of the information gained but there seemed to be no correlation between gain in reading and ability to respond to the task of drawing a room map.

Reading interests. One of the most interesting portions of the Experience Inventory dealt with the expressed reading interests of th subjects. Six "interest categories" were established: (a) Children, Animals, and Humor; (b) Sociology, History and Civics; (c) Family and Self-improvement, Jobs, and Health: (d) Religion; (e) Sports, Adventure, and Travel; and (f) Science and Math.

Titles were selected as previously described in Chapter III to represent each of these categories. The instrument was constructed in such a fashion as to match each single category against every other category twice. Different titles were used in each matched choice. For example, the two titles chosen to represent Category 4 (Religion) were The Story of the Cross and When Adam Walked With God. When this category was matched against Category 6 (Science and Math) the subject was asked to choose between the title The Story of the Cross (representing Religion) and the Story of the Stars (representing Science). The second time these two categories were matched the subject was asked to choose between the title When Adam Walked With God (Religion) and How Science Saves Lives (Science). (The percentage of choice for each title appears in the Appendix.)

Table 24
Experience Inventory: Book Titles
Mean Percentage of Selection of Each Category

Category	Mean % of selection
Family & self-improvement, jobs, health	81
Religion	73
Sociology, history, civics	53
Science	40
Sports, adventure, travel	33
Children, animals, humor	20

In Table 24 the mean percentage of selections for each category gives an index of how frequently each category was chosen. These figures reflect that Category 3, (Family, Self-improvement, Jobs and Health) is ranked first with an 81% selection (see Table 24). Religion was chosen 73% of the time to give it a ranking of second. Sociology, History, and Civics had a 54% rating which provided a ranking of third. Science was fourth with 40%. Sports, Adventure, and Travel, fifth with 34%. Children, Animals, and Humor last, with only 20% selection.

In any three of these treatments Family, Self-improvement, Jobs, and Health always remained first, Religion always remained second, and Children, Animals, and Humor always remained last in frequency of choice.

An interesting comparison of the constancy of these choices is represented in Tables 25-A and 25-B in which the percentage of subjects choosing titles representing each of the categories on the first half of the measure was compared with the percentage of subjects choosing titles for the various categories on the second half of the measure. As each category was matched against each other category twice it provided a means of double checking the selection of one category against the other. An examination of Tables 25-A and 25-B shows that of the 15 possible pairings of one category against another there was a shift in preference only three times. These occurred when Category 2 (Sociology, History, and Civics)

Table 25-A
Experience Inventory
Subject Choice of Book Titles
First Half of the Measure

	Book titles	Category Number	% of Men (N=91)	% of Women (N=83)	Combined % (N=174)
1.	King of Horses	1	12	13	12
	Our Next President	2	88	87	88
2.	A Surprise for Dick & Jane	1	9	11	10
	A Job I Liked	3	91	89	90
3.	The Witch in the Forest	1	3	5	4
	Being a Better Christian	4	97	95	96
4.	Jokes and Funny Stories	1	26	23	24
	Let's Go To Hawaii	5	74	77	76
5.	The Duck That Could Not Fly	1	48	42	45
	A Trip in Space	6	52	58	55
6.	Bombs, Bullets and Bread	2	14	10	14
	How to Raise Children	3	86	90	86
7.	These Are Your Rights	2	24	11	26
	The Life of Jesus	4	76	89	80
8.	The Story of World War II	2	60	74	67
	Hunting Stories	5	40	26	33
9.	Up From the South	2	36	33	35
	What Makes It Rain	6	64	67	65
10.	How to Have a Happy Home	3	83	74	79
	Heroes of the Old Testament	4	17	26	21
11.	How to Eat Better	3	92	87	89
	Lost in a Cave	5	8	13	11
12.	Better Health & Longer Life	3	96	92	94
	Fun With Numbers	6	4	8	6
13.	Stories of the Bible	4	92	94	93
	The Winning Team	5	8	6	7
14.	The Story of the Cross	4	66	69	67
	The Story of the Stars	6	34	31	33
15.	Fishing Tales	5	19	18	18
	Science and You	6	81	82	82

Note.--Percentages indicate that portion of the sample which selected a title in comparison to the other single title with which it was matched.

was compared with Category 6 (Science), when Category 5 (Sports, Adventure, and Travel) was compared with Category 6 (Science), and when Category 3 (Family and Self-improvement) was compared with Category 4 (Religion). In these instances, the first time these specific categories were matched against one another, a preference was expressed which was later reversed when they were matched a second time.

Table 25-B
Experience Inventory
Subject Choice of Book Titles
Second Half of the Measure

	Book titles[a]	Category[b] Number	% of Men (N=91)	% of Women (N=83)	Combined % (N=174)
16.	Puff Gets Lost	1	9	4	6
	Lincoln, Man of Peace	2	91	96	94
17.	Animals I Like	1	23	19	21
	100 Ways to Make Money	3	77	81	79
18.	My Funniest Moments	1	13	10	12
	The Beloved Disciple	4	87	90	88
19.	The Horse Who Couldn't Bark	1	25	25	24
	Football Champs	5	75	75	76
20.	Tom and Jane Help Father	1	30	46	37
	Experiments With Electricity	6	70	54	63
21.	March For Freedom	2	44	28	35
	Ways to Improve Your Appearance	3	56	72	65
22.	Soldiers For Peace	2	33	28	31
	Jesus and the Women at the Well	4	67	72	69
23.	Our Greatest President	2	92	93	90
	Dead Man's Treasure	5	8	7	10
24.	The Fight for Freedom	2	74	65	69
	How the Weather is Changing	6	26	35	31
25.	Learn to Fix TV Sets	3	55	27	40
	Missionaries Paul & Silas	4	45	73	60
26.	How to Have a House of Beauty	3	86	90	87
	Touchdown	5	14	10	13
27.	Train Yourself for a Better Job	3	96	100	98
	The Dinosaur Book	6	4	0	2
28.	The Ladder to Heaven	4	88	94	88
	Floating Down the Mississippi	5	12	6	12
29.	When Adam Walked With God	4	63	58	60
	How Science Saves Lives	6	37	42	40
30.	Our Trip to Canada	5	88	88	86
	Life in the Ocean	6	12	12	14

[a] All titles in any given category are listed in the Appendix.

[b] Numbers represent categorization of book titles as follows: 1 = children, animals, humor; 2 = sociology, history, civics; 3 = family, self-improvement, jobs, health; 4 = religion; 5 = sports, adventure, travel; 6 = science, math.

Table 26
Experience Inventory: Book Titles
In order of Preference in Highest Quartile of Subjects' Selection

Category	Category No.	No. of times preferred
Family & self-improvement, jobs, health	3	8
Religion	4	6
Sociology, history, civics	2	5
Sports, adventure, travel	5	3
Science	6	3
Children, animals, humor	1	0

In the top quartile of titles chosen (Table 26), the category of titles chosen most frequently, and thus the most popular, was Category 3 (Family and Self-improvement, Jobs, and Health). It was chosen eight times. Next in order came Religion which was chosen six times giving it a second place ranking. Category 1 (Children, Animals, and Humor) ranked in the very bottom of the order as it was not selected a single time in the titles chosen most frequently.

Table 27
Experience Inventory: Book Titles
In Order of Preference in Lowest Quartile of Subjects' Selection

Category	Category No.	No. of times preferred
Family and self-improvement, jobs, health	3	0
Religion	4	1
Science	6	4
Sociology, history, civics	2	5
Sports, adventure, travel	5	7
Children, animals, humor	1	8

Among the titles chosen least frequently, Category 3 (Family and Self-improvement , Jobs, and Health) did not appear once (Table 27). This gave it the highest ranking of any of the six categories. The next highest ranking was that of Religion. It had only one title which appeared in the most disliked list. The intermediate spots were filled by Science, chosen four times in the least approved category yielding a ranking of third, and Category 2 (Sociology, History and Civics), which was chosen five times, giving it a ranking of fourth.

Among the titles chosen least frequently (Table 27), Category 1 (Children, Animals, and Humor) was given the lowest ranking. Titles representing this category were chosen eight times. Category 5 (Sports, Adventure, and Travel) was chosen to occupy the next least-liked position.

An examination of the responses by the men and women in this study shows a high degree of similarity in their response patterns. Although the degree of preference varied from one pair of titles to the other, the only instance in which the men and women favored different titles was the choice between the titles Learn to Fix TV Sets, and Missionaries Paul and Silas, in which the men favored the former, the women the latter. It is interesting to note that both sexes favored such titles as Experiments With Electricity (which the men favored more heavily than the women), and Ways to Improve Your Appearance (which the women favored more heavily than the men).

It must be remembered throughout this section that this was a self-report instrument. Initially the research staff raised questions as to the validity of the findings. Interviews during the second half of the study, however, seemed to corroborate the choices which were expressed in the reading-associated-interests part of the Experience Inventory. It remains for a study of the actual selection of materials to finally and completely corroborate the findings, however.

Summary. In a comparison of the highest and lowest quartiles it is interesting to note that both extremes of the distribution show Category 3 (Family and Self-improvement, Jobs, and Health) and Category 4 (Religion) as the most preferred categories. Both quartiles also show Children's Stories, Animal Stories and Humor, Category 1, as being the least preferred. Although it shows poorly in the high quartile, Category 6, Science and Math, does better in the low quartile, ranking in third place rather than fifth. This is actually the only major change in the comparison of the two quartiles.

The total figures for preference of the various categories are contained in Table 28. Here it is possible to examine each category when it

Table 28

Percentage of Subjects Choosing Titles Representing Each of the Categories[a] When Forced to Choose Between Matched Pairs of Titles

Category[a] Number	2	3	4	5	6
1	11/89	18/82	8/92	24/76	43/57
2		22/78	24/76	79/21	52/48
3			58/42	88/12	95/5
4				93/6	63/37
5					52/48

Note.--The categories to the left are represented by the figures to the left of the slash mark; the categories at the top of each column are listed to the right of the slash mark.

[a] Categories:
1 - children's stories, animal stories, and humor
2 - sociological, historical, and civic titles
3 - family and self-improvement, jobs, health
4 - religion
5 - sports, adventure, and travel
6 - science and math

was matched against each other category in the study. As might be presumed from the foregoing discussion, Category 1 (Children's Stories) was seldom selected and never was selected in general preference to any other category. On the other hand, Category 3 (Family and Self-improvement, Jobs, and Health) was chosen in every single case when matched against another category, and Category 4 (Religion) was preferred over each other classification of titles with the single exception of Category 3 (Family and Self-improvement, Jobs, and Health).

Experience Inventory--Control Population

Certain critical portions of the Experience Inventory were submitted to control groups composed of adult city-core literates, child city-core first grade students, and child non-city-core first grade students. Although certain adaptations had to be made in the instrument as explained in Chapter III, relevant comparisons were made to one or all of the control samples.

Table 29
Percentage Comparisons by Rank of Reading Motivation
of Experimental (ACCI) and Control (ACCL) Samples

Ranked motives for wanting to learn to read			
Adult City-core Illiterates	%	Adult City-core Literates	%
To get more education	43	To get more education	81
Job security & advance	43	Understand news/better inf'rm'd	72
Learn special skills	28	Job security & advance	44
Understand news/better informed	20	Bible & religion	36
Miscellaneous	16	For pleasure	27
Bible & religion	10	Help children & others	26
Help children & others	6	Miscellaneous	13
For pleasure (N=174)	0	Learn special skills (N=96)	0

Note.--Miltiple responses were both allowed & encouraged.

Note.--EI question on which these data were based: "Why do you want to learn to read?" (ACCI); "Why do you want to learn to read better?" (ACCL)

The control sample of adult city-core literates was asked the question "Why do you want to learn to read better?" The responses from this question were matched with the responses to the question asked of the adult city-core illiterate population "Why do you want to learn to read?". The responses of the two populations are tabulated in Table 29. Subjects were permitted to give as many reasons for wanting to learn to read as they desired. A notable difference between the two populations lay in the fact that the adult literate population gave many more responses than the adult illiterate population. However, much of this difference is undoubtedly attributable to the fact that the adult city-core literates were able to read the questionnaire and thus were aware of the options. There was, however, some general similarity between the two groups. The most important reason for wanting to learn to read advanced by the adult illiterate population was "to get more education." This was also the response given most frequently by the adult literate population. Both samples placed emphasis on wanting to learn to read in order to obtain job security or job advancement. The adult literate population saw "understanding news" and "being better informed" as of higher value than did the adult illiterate population.

Table 30
Comparisons Between Experimental (ACCI) and
Control (ACCL, CNCC, CCC) Samples:
Siblings

Item	Response			
	Adult City-Core Illiterates (ACCI) N=171	Adult City-Core Literates (ACCL) N=96	Children Non-City-Core (CNCC) N=94	Children City-Core (CCC) N=113
Mean number of brothers	2.9	2.6	1.4	1.9
Mean number of sisters	3.1	2.7	1.5	1.8
Mean number of siblings	6.0	5.3	2.9	3.7

Note.--EI question on which these data are based: "How many brothers did/do you have? How many sisters did/do you have?"

As to the comparison with first grade children, city-core first grade children had an average of 3.7 siblings in their families in contrast to the non-city-core first grade children with an average of 2.9 (Table 30). Discussion of comparisons with the adult populations would be meaningless because obviously many of the first grade youngsters will have additional brothers and sisters in the years to come, whereas the adult populations were able to report their full family size.

Table 31
Percentage Comparisons Between Experimental (ACCI) and
Control (ACCL, CNCC, and CCC) Samples:
Selected Map Knowledges

Map knowledge	Response			
	Adult City-Core Illiterates (ACCI) N=174	Adult City-Core Literates (ACCL) N=96	Children Non-City-Core (CNCC) N=94	Children City-Core (CCC) N=113
Knew correct route from house to school	61%	65%	80%	41%
Got location of railroad completely correct	72%	73%	56%	19%

Note.--EI question on which these data are based: "Look at the map of the little town. Mark the shortest way from the house to the school. Put an 'X' where you think the railroad is."

All four populations were asked to mark on a small map the shortest route from a house to a school. They were also to indicate where the railroad was located. There were not significant differences between the two adult populations (Table 31). There were, however, significant differences between their responses and the responses of the children's groups, and significant differences also between the two children's group responses. The adult populations both did more poorly on the correct route from the house to the school than did the children's first grade non-city-core groups. Both adult groups did better than the children first grade city-core group. The adult groups, however, were able to score higher on the location of the railroad marking on the map, although the non-city-core children's group was able to locate the railroad with 56% accuracy in contrast to the first grade city-core children's group which only obtained 19% accuracy.

When the four populations were asked how well the members of their immediate family were, or are, able to read, they again exhibited some interesting differences (Table 32). Direct comparisons are impossible between the children's groups and the adult groups in this situation because many of the children had siblings who were still of pre-school age and therefore unable to read. However, the siblings of the adult groups were generally mature and responses as to their reading ability would seem to be complete. The adult illiterate group reported fewer people able to read in their family groups on every count than the adult literate group. For example, only 39% of the adult illiterate group reported their fathers could read, in comparison to 69% of the adult literate group. In contrast, the children's groups reported 97% literacy for their fathers

Table 32
Percentage Comparisons Between Experimental (ACCI) and Control (ACCL, CNCC, CCC) Samples: Reading Ability of Subject's Family in Childhood

Relative	Response Adult City Core Illiterates (ACCI) N = 174	Adult City Core Literates (ACCL) N = 96	Children Non-City Core (CNCC) N = 94	Children City Core (CCC) N = 113
Father could/can read	39%	69%	97%	86%
Mother could/can read	49%	72%	94%	96%
Brother(s) could/can read	57%	84%		
Sister(s) could/can read	68%	92%		

Note.--EI question on which these data are based: "About how well were/are the members of your immediate family able to read?"

among the non-city-core first grade children, and 86% literacy on the part of the city-core first grade children.

In the question on the Experience Inventory in which the adult population was asked whether or not anyone in their present family situation could read, again the picture is one which favors the adult literate population (Table 33). For example, 32% of the adult illiterate population indicated their spouse could read, and 52% of the adult literate population made a similar response. Forty percent of the adult illiterate population reported children in their present home could read, and 51% of the adult literate population indicated that there were children in their home who could read.

Table 33
Percentage Comparisons Between Experimental (ACCI)
and Control (ACCL) Samples:
Reading Ability of Those in Present Family Situation

Reader	Response	
	Adult City-Core Illiterates (ACCI) N = 174	Adult City-Core Literates (ACCL) N = 96
Spouse can read	32%	52%
Child(ren) can read	40%	51%
Other relatives can read	10%	20%

Note.--EI question on which these data are based: "In your present family situation can anyone read? Can your father/mother/brother(s)/sister(s) read?"

A comparison of the functional knowledges of the four populations showed no significant difference between the adult literate and the adult illiterate populations in terms of knowing and being able to identify the right hand from the left hand (Table 34). The non-city-core first grade children did almost as well as the two adult groups, however, and only the city-core first grade population had any significant difficulty with the identification of the right and left hand.

In contrast to this finding the adult city-core illiterate had far greater difficulty with directions than did his literate brother in the city-core area. The literate adult made the correct choice of direction 94% of the time, while the illiterate adult was only able to identify the correct direction 40% of the time. The non-city-core first grade children made the correct choice 60% of the time and city-core first grade children did not differ significantly from that level of identification.

Table 34
Percentage Comparisons Between Experimental (ACCI)
and Control (ACCL, CNCC, CCC) Samples:
Selected Functional Knowledges

Functional Knowledge	Response			
	Adult City-Core Illiterates (ACCI) N = 173	Adult City-Core Literates (ACCL) N = 96	Children Non-City-Core (CNCC) N = 94	Children City-Core (CCC) N = 113
Directions: Knows right & left	98%	93%	86%	72%
Directions: Knows north & south[a]	40% (N=174)	94%	60%	55%
Knows correct number of days in the week	73%	97%	76%	50%
Knows correct number of months in the year	82%	95%	39%	17%
Knows correct number of seasons in the year	42%	90%	50%	44%

[a] For adult city core illiterates the knowledge was of east and west rather than of north and south.

In comparing the reading interests of the adult city-core illiterate group with the three control groups (see Table 35), it is interesting to note that the adult city-core illiterates (ACCI) and the adult city-core literates (ACCL) both avoided children's titles. The children's city-core group (CCC) showed a mild preference for the children's titles, while their counterparts in the suburban areas, the child non-city-core (CNCC) sample mildly disapproved of the titles categorized as "children's titles."

In the category of sociological, historical, and civic titles, the ACCI group chose the category approximately half the time. The ACCL group preferred this category mildly, while the two children's groups did not prefer titles from this category.

The third category of family, and self-improvement, jobs, and health, found strong preference on the part of both adult groups. The CCC group mildly preferred the category, while the CNCC group generally preferred not to read titles from this category.

The category on religion showed strong preference on the part of the ACCI group, general preference by the ACCL and CCC group, while the CNCC group showed some slight disinclination to read religious titles.

Neither of the two adult groups preferred to read titles from sports, adventure, and travel. The CCC group showed no preference either way, while the CNCC group showed mild general preference for these titles.

In science and math, the ACCI group generally preferred not to read

Table 35
Percentage Comparison of Book Title Choices
Between Experimental (ACCI) and Control
(ACCL, CNCC, & CCC) Groups

Category Number	Results in Percentages			
	Adult City-Core Illiterates (ACCI) N=100	Adult City-Core Literates (ACCL) N=95	Children Non-City-Core (CNCC) N=92	Children City-Core (CCC) N=110
1	12	3	61	60
2	88	97	39	41
1	17	10	48	44
3	83	90	52	56
1	8	14	64	58
4	92	86	36	42
1	21	25	40	50
5	79	75	60	50
1	41	22	44	62
6	59	78	56	38
2	23	29	54	39
3	77	71	46	61
2	26	45	25	19
4	74	55	75	81
2	80	87	47	43
5	20	13	53	57
2	51	61	40	44
6	49	39	60	56
3	60	61	66	45
4	40	39	34	55
3	87	85	47	71
5	13	15	53	29
3	95	99	42	42
6	5	1	58	58
4	92	81	62	65
5	8	19	38	35
4	62	50	58	70
6	38	50	42	30
5	50	25	44	55
6	50	75	56	45

Note.--EI Book Titles by category:

1 = Children, Animals & Humor
2 = Sociology, History & Civics
3 = Family and Self-improvement, Jobs and Health
4 = Religion
5 = Sports, Adventure and Travel
6 = Science

such titles. The three control groups each took different positions, with the ACCL group expressing no preference either for or against the titles, the CCC groups preferring not to read them, and the CNCC groups listing math and science as preferred reading material.

Although the degree of preference varied, the two adult groups agreed a great extent on their preference for the various titles. Out of 30 possible chances for agreement, the ACCL control group agreed with the experimental population 28 times. In contrast to this, the CNCC and CCC groups agreed 16 and 17 times respectively out of 30 possible chances. On the basis of these findings, it is possible to conclude that the interests of the adult city-core illiterate are similar to the interests of the adult city-core literate, and at some variance with the child city-core or child non-city-core population.

An additional finding is that the children did not express as pronounced and stable a set of preferences as did the adults. The children were generally less sure what they wanted to read than were the adults.

Wechsler Adult Intelligence Scale

An examination of Table 36 shows a remarkably even profile for the verbal and performance scores on the WAIS. The effects of years of illiteracy show in the highly depressed score for each of the subtests. The most depressed score lies in the Digit Symbol area in which the ability to do reading and writing associated tasks manifests itself. In the Digit Symbol subtest the subject has to be able to determine the proper symbol to place in each of the series of blanks, and he must make use of a pencil in doing this. Traditionally this has been a difficult test for students who are poor readers, and the adult illiterate is no exception to this rule.

Table 36
Wechsler Adult Intelligence Scale
With Mean Raw Scores and Corresponding Scaled Score Values

Subtests	Mean Raw Scores	Mean Scaled Scores
Verbal Scores		
Information	6.1	5
Comprehension	10.9	6
Arithmetic	5.2	5
Similarities	4.0	5
Digit Span	7.7	5
Vocabulary	15.2	5
Performance Scores		
Digit Symbol	16.2	3
Picture Completion	5.2	5
Block Design	12.1	4
Picture Arrangement	9.0	5
Object Assembly	17.2	5

Comprehension, which is generally conceived of as being a test of general societal good sense, showed the highest score on the test.

Although more thorough analysis of the WAIS, LAIS, and DEG will be made in the section dealing with the predictive variables, a survey of the subtest protocols indicates a very even distribution of scores for the city-core sample.

The mean verbal scores and mean performance scores on the Wechsler Adult Intelligence Scale as exhibited in Table 37 show that men did slightly better than the women in both areas.

Table 37
Wechsler Adult Intelligence Scale
IQ Means and Standard Deviations

Item		Men		Women		Total Population
Verbal	$\bar{X}$	74.7	$\bar{X}$	70.0	$\bar{X}$	72.5
	S.D.	10.5	S.D.	10.0	S.D.	10.5
	N	77	N	67	N	144
Performance	$\bar{X}$	72.3	$\bar{X}$	70.1	$\bar{X}$	71.2
	S.D.	12.1	S.D.	11.2	S.D.	11.7
	N	77	N	67	N	144
Full Scale	$\bar{X}$	72.2	$\bar{X}$	67.7	$\bar{X}$	70.0
	S.D.	11.0	S.D.	12.8	S.D.	12.1
	N	77	N	67	N	144

The WAIS total verbal performance and full scale scores failed to achieve any higher than a .27 correlation with gain in reading achievement. The test in its totality is not an effective instrument for differentiating between subjects who learn easily and those who do not. The test is long and rapidly moves to items which are too difficult for a disadvantaged adult city-core population.

Leiter Adult Intelligence Scale

An examination of the scores contained in Table 46 shows that although the WAIS has dubious value as an instrument for measuring the potential achievement of the adult city-core illiterate, the LAIS is even more lacking, with the Leiter Verbal, Performance, and Full Scale scores not exceeding a correlation of .23 with reading gain. An examination of the subtests of the Leiter reveal that many begin at a level which is too difficult for even initial success on the part of the sample and the progression in difficulty is poorly paced. The LAIS Stencil Design and Cubes subtests were the two exceptions to this generalization. Both of these tests seemed

Table 38
Leiter Adult Intelligence Scale
IQ Medians and Standard Deviations

Item	Men	Women	Total Population
Verbal	Mdn 61.5 N 64	Mdn 52.0 N 61	Mdn 56.7 N 125
Performance	Mdn 49.0 N 62	Mdn Below Norms N 61	Mdn Below Norms N 125
Full Scale	Mdn 56.5 N 62	Mdn 50.0 N 61	Mdn 56.3 N 125

Note.--LAIS median scores are presented rather than means due to the large number of LAIS scores which fell below the norms.

Note.--No standard deviations were possible for the LAIS scores because the lower quartile was below the norms and therefore no variability was computable.

to have some minor discriminative ability. In general, however, the LAIS proved to be an inappropriate measure for use with adult city-core illiterates. (Table 38 presents the Verbal, Performance, and Full Scale scores for the LAIS.)

As explained in Chapter III, an attempt was made to modify the Pathways subtest so that it might be more useful in testing the sample population. This modification improved the relationship between reading gain and the subtest performance.

Because so many of the scores fell below the norms of the test, it was not possible to establish mean scores for the subjects. In place of these, medians were established and are tabulated together with the standard deviations for these IQ medians. Even through the use of medians it was often impossible to get scores for performance sections of the LAIS.

In summary, the LAIS proved to be poorly adapted for use with this population. What may be gained from this portion of the study is the understanding of how difficult it is for an adult city-core illiterate to be able to make meaningful differentiations at the level required by the LAIS on Similarities and Differences of various terms such as "How doctor and nurse are alike, and how they are different" or "How are January and Sunday alike, and how are they different?"

The results on the LAIS also point up the difficulty that such a population has in hearing a story, recalling the sequence, and repeating this story back to the examiner. It is easy to underestimate the amount of training needed by a youngster or an adult before he is able to listen to a narrative and reproduce it effectively. It is the observation of the research staff of this study, that this is an ability and a skill which has not been developed by the adult city-core illiterate.

Even the ability to respond to specific questions often confused, disturbed, and troubled the subjects. Although they understood the questions, the difficulty level was much too high. These subjects had never learned to focus their attention as school children are taught to do, in order to be able to recall details of the story and thus handle questions effectively.

As was previously mentioned, the Pathways portion of the LAIS was extremely difficult, as was the Stencil Design and Painted Cubes subtests. The letters of the alphabet and interspersed numerals which appear in the Pathways portion often proceeded beyond the level that adult illiterates know. For example, not only do they deal with the problem of interspersing the letters of the alphabet and numerals in sequential order, but they also deal with the problem of being able to recall the numeral "that comes after 18," or the letter "that comes after G." This is not a measure of potential ability, but a measure of degree of educational background.

Davis-Eells Games

Although the Davis-Eells Games was constructed to yield a single full-scale score standardized on a children's population, for this investigation it was felt more information could be gained by separating the four subtests and studying the results of each of these four in addition to the single full-scale score. The Arithmetic subtest proved to be extremely difficult in terms of directions and understanding on the part of the adult city-core illiterate population. Every attempt was made to simplify the directions using charts, illustrations of one kind and another,

Table 39
Davis Eells Games
Raw Scores and Standard Deviations

Subtests	Men	Women	Total Population
Probabilities	$\bar{X}$ 9.6 S.D. 3.4 N 85	$\bar{X}$ 9.3 S.D. 3.1 N 79	$\bar{X}$ 9.4 S.D. 3.1 N 164
Arithmetic	$\bar{X}$ 5.2 S.D. 1.9 N 84	$\bar{X}$ 4.9 S.D. 1.7 N 76	$\bar{X}$ 5.1 S.D. 1.8 N 160
Best Way	$\bar{X}$ 9.9 S.D. 3.5 N 86	$\bar{X}$ 9.0 S.D. 3.1 N 79	$\bar{X}$ 9.5 S.D. 3.3 N 165
Analogies	$\bar{X}$ 8.3 S.D. 3.0 N 86	$\bar{X}$ 8.0 S.D. 2.5 N 79	$\bar{X}$ 8.1 S.D. 2.8 N 165
Full Scale	$\bar{X}$ 32.6 S.D. 8.6 N 84	$\bar{X}$ 31.3 S.D. 6.9 N 78	$\bar{X}$ 32.0 S.D. 7.8 N 162

and various verbal techniques. In the end it was still the conclusion of those involved that the Arithmetic subtest of the Davis-Eells was difficult, if not impossible, for the majority of the research sample to understand. The difficulty of the Arithmetic subtest made the results of generally questionable value.

On the other hand, the Probabilities, Best Way, and Analogies sections of the test proved to be rather easily understood by the research sample, and seemed valid estimates of the abilities of the subjects. In these, the scores of the men and women varied very little. The men did somewhat better with the Best Ways section than did the women and slightly better in the Analogies, but only very slightly. Again, the superiority of the men on measures of potential seemed somewhat peculiar in light of the finding, which will be explained more fully later, that women tended to do better in gain scores than did men. The full scale results on the Davis-Eells showed the men doing slightly better, but again, the difference was so small as to be insignificant.

Most of the subtests are plagued with certain items which seem poorly illustrated or poorly designed. In some cases the best choice was not clear even to members of the research staff. It is the opinion of the staff that the test holds promise; but certain items need to be clarified, some items need to be deleted, and perhaps better and more profitable items need to be substituted. The Arithmetic subtest would appear to be virtually useless for this population in its present organization.

Telebinocular

One of the original criteria for inclusion in the experimental population was the ability to pass the Keystone Telebinocular Visual Screening Test. Telebinoculars were administered to 177 of the subjects. Table 40 gives the results of this administration.

Table 40
Keystone Telebinocular Visual Screening Test
Nearpoint

Telebinocular Subtests	Subject's Visual Ability	
	Pass	Fail
Hyperphoria	141[a]	35
Near-Point Fusion	122[a]	54
Usable Vision		
Both Eyes L O Z P C	126[a]	50
Right Eye T Z O D L	75	101
Left Eye O P T D C	64	112

[a] The subtest was not applicable for two one-eyed subjects.

A different look at this same data is presented in Table 41 which presents the totals for subject's vision.

Table 41
Total Subject Data on Keystone Visual Screen Test

Item	Status of Subject's Vision				
	O. K.	Some Diff.	Fail	Missing Data	Total
No. of Subjects	44	133	1	30	208

As may be seen by Table 41, 66% of the subjects had some vision difficulty although only one subject completely failed the test. Unfortunately, due to pupil attrition and absences, it was impossible to obtain a test on 24% of the subjects.

Stanford Achievement Test--Word Reading and Paragraph Meaning Subtests

The SAT does not appear to be a satisfactory measure for assessing the achievement of the adult city-core illiterate. The vocabulary is liberally sprinkled with such terms as "toys," "ball," "run," "play," and the names of small animals. It is an inadequate measure when one attempts to assess the reading performance of adults taught to use words such as "job," "check," "work," "bus," "hire," "spend," "buy," and "time." It is obvious to the test taker that he knows few of the words on the test. The format seems childish and helps to remind him of his inadequacies. In addition, the experience must seem to the test taker to take a great deal of his time for little purpose.

From the point of view of the school or the researcher, there are even more serious objections to such a measure. The test has been standardized on children's populations. The norms are therefore not applicable to the populations being tested with the instrument. When used to measure growth in reading, the test is inadequate because it is not constructed on the vocabulary and concepts taught and therefore does not measure the growth the student has hopefully made.

It may be reasoned that the SAT is a fair test to use from a research point of view because the control group would have no advantage over the experimental group, or vice versa. It should be pointed out, however, that many of the apparent gains and losses measured by such a children's testing instrument are not necessarily reliable differences, and that a large proportion of the difference between pre- and posttest scores may be attributable to chance. Small true differences are swallowed by much greater error differences, making it necessary to exercise care in interpreting these test results.

In summary then, the Stanford Achievement Test, Word Reading and Paragraph Meaning subtests tended, in the opinion of the research staff, to be inadequate to measure change in ability on the part of the research sample. The tests were a poor measure of what the subjects were learning. The results point strongly to the need for good adult measures, standardized on adult basic education populations.

Methodological Study

Measurement of Gain

In measurement of gain for the i. t. a. methodological study undertaken during the second year of the research grant, it was necessary to establish a baseline against which the gains of the second-year students could be compared. Pre- and posttest SAT scores from subjects who participated in the first year testing program were used as this baseline. Two hundred and six students took the pretest and after the instructional period was finished 192 took the posttest. The mean SAT pretest was 1.9, the mean SAT posttest was 2.1. These are, of course, rounded figures with the SAT gain rounded to .31. The standard deviation for the SAT gain was 0.6.

The pretest of the SAT was given to the 58 subjects in the i. t. a. methodological study as they began their instruction. The instructional program described in Chapter III consisted of the initial teaching alphabet, with adult materials paced to the learning rate of adult city-core illiterates and combined with a program of pre- and in-service teacher training.

The initial administration of the SAT was in traditional orthography. After 100 hours of instruction a second instrument, printed in the initial teaching alphabet, was administered. After 200 hours, the subjects were again tested with a test printed in traditional orthography.

The test results at the end of the year showed no significant difference between the gain score made by the 192 subjects in the control group during the first year of the project and the gains made by the i. t. a. methodological group of 58 subjects. The mean gain for the control group was .31 and for the experimental group, .35.

There were differences, however, in the subjective measures which were collected. The most striking to the research staff, who observed classes both years, was the change in attitude of the experimental sample. The opportunity the i. t. a. afforded to read higher-concept material at an earlier level seemed a factor in the heightened interest. Although students sometimes objected to the i. t. a. type size, and to having to add new materials to their notebooks so often, they reacted positively to the content of the materials.

It was also observed that the reading performance of the experimental group surpassed that of the control group of the previous year. This opinion was supported by supplementary measures of gain: The taped readings made at the beginning and end of the year were significantly better after 200 hours of instruction. At the beginning of the 200 hours of instruction most had not been able to read easily within the first ten pages of the first level book of the Missouri Materials. In contrast, following the 200 hours of instruction, the majority of students were able to begin the second level of the Missouri Materials. Some had already gone far beyond that.

The three teachers experienced in working in adult basic education programs felt that in the main, the students had made excellent progress. Naturally, their estimations varied concerning the progress of individual students, but generally they felt the progress made had been greater than that seen in previous groups.

Each student in the experimental population was interviewed after the i. t. a. methodological study. Out of the 58 students, only one voiced negative comments. This was a student who came into the program after it had begun and thus had some difficulty accommodating himself to the new alphabetic medium. The other students felt the program had been extremely valuable and several expressed strong support for both the materials and the instruction.

An additional measure of comparison made use of the gain figures for the three classes involved in the research study during the initial or control year and during the second or i. t. a. experimental year. In spite of much turnover in the adult education classes, a sufficient number of students were found to make a general comparison between the gains of the first-year students and those of the second, or experimental year. The overall total showed that in the school year 1966-67, using the pre- and posttest results of the SAT, 40% of the classes recorded a loss, 47% showed gains, and 14% made no change. During the i. t. a. experimental year, 1967-68 only 19% showed a loss, 46% made gains, and 35% showed no change.

Limitations

One limitation in a methodological study is the difficulty of controlling variables which may affect the outcome. Obviously the greatest variable is teacher ability. Successful teachers promote consistent attendance, interest, and high learning results. In this study there seemed to be no difference in enthusiasm and ability between the adult basic education control teachers in the Buffalo and Niagara Falls programs of the previous year, and those involved with experimental i. t. a. classes.

Cancelling variables is another limitation possible in such a study. For example, use of the i. t. a. and adult materials, concern with pacing and an appropriate learning rate for adult illiterates, and pre- and in-service training of teachers, are all variables which may have introduced confounding effects. Possibly certain of these variables produced positive learning results while others did not, though on the surface it seems unlikely this is the case with those variables mentioned above. However, it is possible that the production of materials, the confusion attending their addition to the student notebooks, and the occasional difficulty with clear reproduction of type characters in dittoed materials, may have had a negative effect on learning. The research staff, however, feels the overall success of the adult materials was positive.

A subjective limitation of the study lay in the unknown effect previous experience in traditional orthography may have had on students in the i. t. a. methodological classes. It seems likely it took longer for adult illiterates to accommodate themselves to reading i. t. a. than would be the case with first graders entering school with limited or no experience with traditional orthography. Although objections to the use of the novel alphabet were mild and acceptance by the adult students more positive than anticipated, the research staff felt the alphabet's peculiarities posed problems for those students who had taught themselves to read (usually somewhat laboriously) up to a latter first grade or early second grade level before entering the i. t. a. classes.

Should this be a limitation to the study, a second year's use of i. t. a. in the same classes would help clarify whether true gains were made after the initial accommodation to the alphabetic medium.

Subjective Findings Related to the Four Variables

i. t. a. The initial reaction by the research population to the use of i. t. a. as the teaching medium was one of curiosity and uncertainty. However, it was explained to the class that this would not be the nature of the material they would eventually read, but that this alphabet was to be a temporary means of accelerating the learning process. The class accepted the alphabet with minimal reservations, being assured that i. t. a. was a step toward reading with more assurance in traditional orthography. It was shown, by reference to the text, that the stories were printed in T. O. next to the same selection in i. t. a. This permitted the reader to read the selection in i. t. a., and then to refer to the same selection in T. O. At the end of the year more students preferred to read in i. t. a. than in T. O., making the comment that it was easier to understand words or to analyse them in the i. t. a. Nonetheless, they seemed to look forward to reading in traditional orthography.

Adult materials. The materials produced as a supplement to the Missouri Materials were well received by the research sample. These materials, previously described in Chapter III, were constructed with reference to the interests determined during the first year of the study. Of all the supplemental materials only the transliterated songs met with limited success, since the teachers felt reluctant to sing with their classes. Greater enthusiasm occurred when, on occasion, the visiting research staff joined in the singing.

Pacing and learning rate. When the Missouri Materials were first used it was immediately obvious that the pacing was too rapid for this particular population. Therefore, easier materials were prepared as lead-ins to the stories in the Missouri Materials. This slower pacing seemed easier for most of the classes to maintain. One of the three classes, however, moved more readily than the other two and required less repetition of supplementary materials. In all cases the classes used almost all portions of supplementary materials. The students seemed pleased with the success which the supplementary materials provided.

Teacher training. Probably one of the greatest successes of this portion of the study lay in the pre-service and in-service teacher training. Although the teachers had worked with adult basic education classes before, and in many respects were skilled teachers, the weekly observation and training sessions seemed to lend them confidence and incentive to try new approaches and to make optimal use of the materials presented to them. In the opinion of the research staff each of the three teachers made significant professional gain.

Study of Predictive Variables

In this segment of the research program, variables were selected from the EI, WAIS, LAIS, and DEG. Chi square and Gamma correlation coefficients or Pearson product-moment correlations were computed between each of the predictor variables and the criterion variable of SAT gain, combining the SAT Word Reading and Paragraph Meaning Scores.

Table 42
Chi Square Correlations Between
Reading Gain and Identification Variables

Variable	N	Gamma	Chi Square	P
Welfare	180	-.32	7.92	.01
Sex	189	.23	4.60	.05
Parents' Occupation Level	153	.13	13.87	.01
Adequate Food	156	-.04	6.24	.05
Education Level	137	.26	17.84	.01
Brothers' Reading Level	152	.03	3.56	.10
Readers at Home	158	.14	3.29	.10
Children Read	157	.11	4.00	.05

The correlations appearing in Table 42 compare the reading gain discriminated by the pre- and posttest of the SAT, Word Reading and Paragraph Meaning sections, with various identification items from the Experience Inventory. The first item in the table signifies that non-welfare students showed more gain than those on welfare. The selection which welfare status implies may be the cause. That is, those unable to learn a job and keep it are less successful at learning to read than those not on welfare, thus showing that the latter are able to learn tasks necessary to maintain employment.

It is interesting to note also that although the men tended to do slightly better than the women on the measures of potential, a correlation of .23 indicated that women show higher gain. Although they may not have done as well in the measures of potential, women may be better suited to the sedentary climate of the classroom than men.

The next item in the table is Parents' Occupation Level. As previously described, the occupation level of the subjects' parents was differentiated in terms of communication necessary in that occupation. Where there was much language involvement in the occupation of the parent, there tended to be a slightly better chance for that subject to learn to read.

Previous educational level by the subjects correlated reasonably well (.26) with gain in reading. Since the criteria for inclusion were the same regardless of educational level, this may be somewhat surprising, for presumably if one had tried and failed he would be less successful than if he had not gone to school at all. However, the correlation shows that those who had previously attended some school did better when they later returned to school, than those who had not had such early school experience.

Those subjects with someone in the home to read to them, learned to read somewhat better even though the correlation is not high. In like fashion, those with children to read to them did somewhat better at their own attempts to learn to read.

In Table 43 the six of the thirty matched titles which correlated significantly with SAT gain were later combined to make up an additional variable which was then included in the regression analysis.

Table 43
Chi Square Correlations Between SAT
Reading Gain and Book Preferences

	Book Titles	N	Gamma	Chi Square	P
4.	Jokes & Funny Stories Let's Go To Hawaii[a]	156	.26	5.66	.05
5.	The Duck That Could Not Fly A Trip in Space[a]	156	.23	6.94	.05
17.	Animals I Like 100 Ways to Make Money[a]	156	.24	2.96	
20.	Tom & Jane Help Father Experiments With Electricity[a]	157	.28	7.80	.01
23.	Dead Man's Treasure Our Greatest President[a]	157	.51	NA	
29.	When Adam Walked With God How Science Saves Lives[a]	156	.32	11.72	.01

[a] For ease of interpretation, the book titles listed second within each pair were preferred by those subjects having highest SAT gain.

It is interesting to note in Table 44 that nine functional knowledges and possessions have some significant relationship with reading gain. Although possession of a television set did not correlate strongly with reading gain, possession of a radio or phonograph did, and at a significantly high level. Beyond this, awareness of the cost of automobile insurance, recognition of the speed at which a phonograph turntable revolves, knowing the correct temperature within a refrigerator, and the ability to use a telephone to gain information or secure a repairman all suggest that the adult illiterate who seems to learn from his environment is generally better at learning how to read than is his less apt colleague.

The results of the last item in the table, "repeating pencil taps," indicate that those able to reproduce rhythmic patterns may have a slightly greater degree of learning potential than those unable to do so.

Table 44
Chi Square Correlations Between Reading Gain
and
Functional Knowledges and Possessions

Variable	N	Gamma	Chi Square	P
Knows how to have phone repaired	158	.11	6.19	.05
Knows Insurance Costs	158	.25	9.59	.01
Has radio	162	.36	5.10	.05
Has phonograph	158	.18	2.73	.10
Knows phono. speeds	158	.27	7.43	.01
Knows temp. within refrig.	162	.19	5.36	.05
Dialing phone information	158	.05	4.23	.05
Dialing phone operator	158	.19	13.63	.01
Repeating pencil taps	161	.12	9.35	.01

The ability to gain meaning from maps as indicated by the subject's readiness in identifying the shortest route between two points or in recognizing railroad markings, seems to have some low level correlation with the ability to learn to read (Table 45).

Table 45
Chi Square Correlations Between Reading Gain
and
Maps and Time Information

Variable	N	Gamma	Chi Square	P
Identify shortest route on map	162	.20	4.49	.05
Identify Railroad markings on map	162	.15	3.59	.05
Knows days in week	161	.18	4.84	.05
Knows months in year	161	.32	4.84	.05
Knows seasons in year	161	.26	14.10	.01

An ability to learn certain common knowledges from one's environment is probably reflected in knowing the days of the week, the seasons, and the months in the year. Those subjects able to learn these chronological divisions appear also to be those who learn to read more successfully.

None of the Leiter Verbal subtests proved to be significant in their correlation with reading gain (Table 46). The Leiter Total Verbal, however, had a correlation of .19 which proved to be significant at the .10 level. The performance tests in the Leiter scale proved to be somewhat more significant with a correlation of .22 and .20 for the LAIS Stencil Design and LAIS Cubes tests respectively. The LAIS Total Performance correlated at a .21 and the Full Scale had a correlation of .23.

The LAIS Total Performance and Full Scale scores would undoubtedly have been higher had it not been that the LAIS Pathways test had a -.09 correlation.

Table 46
Pearson Product-Moment Correlations Between Reading Gain and Significant LAIS and WAIS Subtests

Variable	N	r_{xy}	P
LAIS Total Verbal	112	.19	.10
LAIS Stencil Design	111	.22	.05
LAIS Cubes	110	.20	.05
LAIS Total Performance	110	.21	.05
LAIS Full Scale	110	.23	.05
WAIS Information	128	.24	.01
WAIS Digit Span	128	.30	.01
WAIS Digit Symbol	128	.23	.01
WAIS Picture Arrangement	128	.28	.01
WAIS Total Verbal	128	.23	.01
WAIS Total Performance	128	.26	.01
WAIS Full Scale	128	.25	.01

The WAIS tests did better. The Information subtest, having a correlation of .24, was higher than the entire Full Scale of the LAIS. This proved significant at the .01 level as did the WAIS Digit Span, Digit Symbol, and Picture Arrangement subtests. The highest correlation was with Digit Span which had a correlation of .30. The WAIS Total Verbal had only a correlation of .23, however, while the Total Performance had a correlation with reading gain of .26, and the Full Scale of a .25. These three scores were lower than either the Digit Span or the Picture Arrangement subtests.

None of the Davis-Eells subtests correlated well enough with reading gain to obtain significance, although the Davis-Eells Full Scale score correlated .19 with reading gain and there were no negative correlations.

Teacher Estimation Correlations

An interesting addition to the information gathered was the teacher rating for each of the students. Each teacher was asked to give a personal estimate of the gains made during the year by the students within her classroom. These rankings of student progress were then modified and correlations run between variables with teacher ranking as a criterion. The findings were interesting. In cases where the SAT gain score correlated with a variable at a level of .15 or higher, the teacher rating correlation with that same variable was higher yet, with one exception. On the WAIS Picture Arrangement subtest the correlation between the reading gain score and the subtest was .28. The correlation between teacher rating and the variable was .24. In all other cases the correlation was higher between teacher rating and the variable, and between the SAT reading gain score and the variable.

One might guess that the teacher estimation correlations were higher partially because they were more accurate, involving only one measure rather than two as in the case of the gain score. Also, teachers may be more accurate in determining what progress was actually made, and that although the standardized reading tests were able to indicate the progress that was made, the teachers were able to much more definitely pinpoint those students who were making strong progress. This would, of course, similarly account for the increased correlation on the part of the teacher estimations.

Limitations

One of the major limitations of this portion of the study was the unavailability of many of the subjects for complete testing. Their intermittent attendance and high dropout rate posed many problems for the test administrators and the statistician as well. Mean scores were eventually plugged in for those tests which had missing data. This was necessary in order to achieve the size sample desired. Only approximately 10% of the entire sample had completed all parts of all tests and inventories.

It had originally been anticipated that the predictive variables would be validated by testing them on the subjects involved in the i. t. a. methodological study the second year. Numerous problems with the treatment of the data, such as the movement of the computer center during the time data were tabbed and treated, delayed the identification of the predictive variables until so late in the second year that they could not be administered to the experimental population of 58 subjects in the i. t. a. methodological study.

Regression Analysis

In the stepwise regression used for this treatment there were 28 predictor variables plus the criterion variable of reading gain. The variables included six subtest scores from the LAIS, four subtest scores from the Davis-Eells, eleven subtest scores from the WAIS, a variable composed of responses to matched choices for five pairs of book titles, a variable composed of the number of reasons the subject suggested for reading difficulties, a variable composed of the number of things which persons in his family read to the subject, another variable composed of the number of reasons why the subject wanted to learn to read, subject's score on the functional knowledges section of the Experience Inventory, subject's score on the general knowledges section of the Experience Inventory, and a variable constructed from the reading ability of the members of the subject's childhood family.

In the regression analysis the F-level for inclusion was .01. The F-level for deletion was .005, with a tolerance level of .001. Those listed in Table 47 are those which met this criterion.

Description of regression variables. An examination of Table 47 shows a series of regression analyses with the variables being added one at a time to produce the greatest predictive strength in a stepwise regression. The first variable, "Preferred Titles," was composed of those six book title preferences which correlated highest with reading gain (Table 43).

In step two of the multiple correlation, the Analogies section of the Davis-Eells Games was added. This was a verbal pictorial test of the subjects' ability to generalize from the relationship between two pictured objects to another set of objects presented pictorially. It is of interest to note that although this subtest of the Davis-Eells ranked

Table 47
Summary of the Regression Analysis
Showing Multiple Correlation With Reading Gain As Dependent Variable

Step	Variable	No. of Variable	Multiple Correlation
1.	Preferred Titles	1	.2169
2.	D/E-4 (Analogies)	31	.2511
3.	WAIS-8 (Picture Completion)	39	.2722
4.	Readers (General Reading Ability of Family)	49	.2864
5.	WAIS-10 (Picture Arrangement)	41	.2976
6.	LAIS-4 (Pathways Revised)	25	.3115
7.	Functional Knowledges	47	.3217
8.	WAIS-1 (Information)	32	.3268
9.	WAIS-3 (Arithmetic)	34	.3348
10.	WAIS-9 (Block Design)	40	.3402
11.	WAIS-5 (Digit Span)	36	.3445
12.	LAIS-3 (FR-CR)	24	.3474
13.	D/E-3 (Best Way)	30	.3509
14.	LAIS-2 (Digits)	23	.3541
15.	LAIS-4 (Similarities-Differences)	22	.3557
16.	LAIS-6 (Painted Cubes)	27	.3574
17.	WAIS-2 (Comprehension)	33	.3585
18.	Why-3 (Why do you want to learn to read?)	46	.3593
19.	WAIS-7 (Digit Symbol)	38	.3601
20.	WAIS-11 (Object Assembly)	42	.3606
21.	WAIS-6 (Vocabulary)	37	.3612
22.	Why-2 (What did they read to you?)	45	.3616
23.	LAIS-5 (Stencil Design)	26	.3619
24.	WAIS-4 (Similarities)	35	.3623
25.	General Knowledges	48	.3625

high as a variable in the regression analysis, there were a number of items within the subtest which were non-predictive or poorly-predictive. Other items within the test, however, proved to be highly correlated with reading gain.

The third step of the multiple correlation was the addition of the WAIS Picture Completion subtest. In this subtest, the subjects are to identify the missing part of a set of pictures.

The fourth step was the addition of the general reading ability of the family. The general level of reading ability of mother, father, sisters, and brothers were added together and the subject was asked to identify the member of the family to whom he felt closest. The reading score of that member of the family was then added to the total of the averages for the family and this total score was used as the variable in the regression analysis.

The fifth step was the WAIS Picture Arrangement subtest in which the subject is asked to arrange cartoon-type pictures in an effort to tell a logical story.

The LAIS Pathways revised score, was added as the sixth variable. Two tasks were involved in this test. One was the simple connection by drawn pencil line from one number to another through a series of 25 numerals. The second task is similar to the first in that locations on a sheet of paper are connected by drawn pencil line, with the additional burden of interspersing numbers and letters of the alphabet. For example, the subject must connect number 1 with letter A, then number 2 to letter B, then to 3, then to letter C, etc. As the subtest was originally scored, the subject had to complete a task before he was given any credit. It was found that by revising the scoring and permitting partial credit, the LAIS Pathways became somewhat more predictive.

The Functional Knowledges portion of the Experience Inventory was added as the seventh step in the regression analysis. This section was intended as a measure of the ability of the subject to function in his environment. He was asked how to get his telephone repaired when it is out of order, or where to borrow money to buy a house, or approximately how cold the non-freezer part of a refrigerator might get. A tally was made of acceptable responses, and this number was then indicated as a variable in the regression analysis.

The ninth step in the regression analysis was the addition of the arithmetic section of the WAIS. This might be classified as the ability to do "mental arithmetic." The subjects are asked to compute in their minds the answers to increasingly more difficult problems. It is interesting by contrast to note that the Davis-Eells arithmetic section did not appear as one of the 25 predictive variables.

The tenth step was the WAIS Block Design subtest, an adaptation of the Kohs Block Design, in which the subject is asked to reproduce patterns through the manipulation of colored blocks.

Step eleven was the WAIS Digit Span subtest in which the subject is asked to repeat digits forward and backward. Again, it is interesting to note that the WAIS subtest was found to be somewhat more predictive than the LAIS test which is quite similar.

Step twelve was the LAIS Free Recall and Controlled Recall subtest in which a story is told to the subject and the subject must repeat it: first, without any direction; then, through the guidance of questions which are asked.

Step thirteen was the Davis-Eells Best Way subtest in which the subject was asked to indicate the one of three pictures which best described the way to solve problems such as getting over a fence, retrieving an object from a mud puddle, etc.

The LAIS Digits test was step number fourteen. It is quite similar to the WAIS Digit Span subtest.

The fifteenth step was the LAIS Similarities and Differences subtest in which the subject is asked to describe how certain items are alike and how they are different. It is interesting to note that in the administration of this particular subtest the subjects had much more difficulty finding ways in which the items were similar than ways in which they were different.

The sixteenth step of the regression analysis was the LAIS Painted Cubes subtest in which three designs were to be reproduced as they appeared on cards given to the subjects. In comparison to the WAIS Block Design test, the LAIS test seemed to provide for much less gradation of ability.

The WAIS Comprehension subtest was the seventeenth step in the regression analysis. Step number eighteen was called "Why-3." This was simply a tabulation of the number of reasons given for wanting to learn to read.

Number nineteen was the WAIS Digit Symbol subtest in which the subjects were asked to place the proper symbol under a series of digits. The twentieth step was the WAIS Object Assembly subtest. In this subtest the subject was asked to perform a jigsaw type operation in which he puts cutout parts of the picture together to complete some object.

The vocabulary section of the WAIS was the twenty-first step. This is a simple vocabulary test in which the subject replies to words which are given him, attempting to define them. It is interesting to note that the WAIS vocabulary test appeared so late in the regression equation, since it is often considered a prime measure of learning potential.

Step number twenty-two was called "Why-2." It was composed of a simple tabulation of the types of materials which the subject reported were read to him by other people in his family. The Stencil Design section of the LAIS was the twenty-third step. In this subtest the subject was asked to reproduce designs through the use of bits of paper which were provided to him, comparing them with pictures which were provided for his use.

The twenty-fourth step in the stepwise multiple regression was the addition of the WAIS Similarities. Again, a consideration of the WAIS Similarities subtest and the LAIS Similarities and Differences subtest shows some interesting comparisons. It proved to be easier for the subjects to describe differences between objects than for them to describe similarities. In the LAIS, unlike the WAIS, they were permitted to describe differences and this provided more gradations of ability at lower levels.

The last step which was added to the regression analysis was the General Knowledges portion of the Experience Inventory. This was a simple tabulation of the number of correct responses made to questions of presumed general knowledge, such as directionality, etc.

It would appear that the first seven steps of the regression analysis would provide all useful variables. Only 4/100ths of a correlation are added for the remaining 18 variables.

By squaring the multiple correlation at the seventh step an approximation of the variability accounted for may be obtained, in this case accounting for .1035, or in other words, approximately ten and one-third percent of the total variance. By proceeding on to the twenty-fifth step, however, only .1314 of the variance was accounted for, or slightly better than 13%.

In predicting success in learning to read at a .32 level of correlation, one would multiply the scores on the various measures indicated in the first seven steps of the stepwise multiple correlation by the beta weight indicated in Table 48, adding the control indicated in the same table.

Table 48
Variables and Weights in the Regression Equation

Variable	No. of Variable	Beta Weight
Books	1	.09410
D/E-4 (Analogies)	31	.03808
WAIS-8 (Picture Completion)	39	-.02852
Readers (General reading ability of family)	49	-.00845
WAIS-10 (Picture Arrangement)	41	.01801
LAIS-4 (Pathways Revised)	25	-.01840
Functional Knowledges	47	-.02184
(Constant)		(.11013)

It is interesting to note that three of the first seven measures were contained in the Experience Inventory, one came from the Davis-Eells, two from the WAIS, and one from the LAIS. The one from the LAIS was revised by the research staff to provide a stronger measure of predictability.

It is the opinion of the research staff that greater strength in predicting success in reading could be achieved through isolating, by item analysis, the most predictive subtest-variables, which would then be combined into a single instrument using a new format. It is likely that by deleting the negative predictors a considerable increase in the total predictive strength of the variables might be achieved.

Validation of the regression analysis seems pointless at this stage. The low multiple correlation indicates the need for a more refined measure, developed through the process just indicated, before the time and effort called for in a validation would be justified.

Chapter V: Findings, Recommendations, and Summary

The findings of this report are presented as they are related to the three segments of the investigation: Common Characteristics of Adult City-core Illiterates, Methodological Study, and Identification of Predictive Variables.

Findings: Characteristics of the Adult City-core Illiterate

Experience Inventory

Background. Data from the Experience Inventory indicated the students in the Buffalo and Niagara Falls Adult Education Divisions were middle-aged (mean age 46.6), ranging from 18 to 81 years--an age at which jobs become increasingly difficult to obtain for those with a poor education. On the average, the sample population had lived in western New York over 17 years. Generally they came from families with extremely poor reading backgrounds.

In their present reading situation over one-third of the sample said no one in their home was able to read. Fewer male spouses than female were able to read. Of those with people at home able to read to them, three-fourths reported they were seldom or never read to aloud. When they were read to the most common reading material was the newspaper.

The subjects in the study came generally from the rural areas of the southeastern United States. From 15 to 30% of the experimental sample were reared by persons other than their parents. Some 35% indicated that as children they often had difficulty getting enough to eat. Their Experience Inventory data indicated that these illiterate adults consistently felt closer to their fathers than to their mothers.

The reasons given by the subjects for wanting to learn to read were: to get more education, to get a job, or to learn special skills. Smaller percentages wanted to learn to read in order to read the newspaper, or the Bible, or for travel, or in order to read to their children.

Most parents of the subjects pursued occupations requiring little language involvement. Many came from agrarian backgrounds where there was little call for communication. Even basic communication was often more limited than usual. Generally the occupations of the subjects required a higher level of communication than was necessary with their parents. Some are employed in service occupations where standard English is used. Even for those who are working in situations which may involve non-standard English, the demands for communication still have increased for the subject over those which existed for the subject's parents.

Possessions. The Experience Inventory revealed that most members of the experimental sample had a telephone and television set. A sizeable number also owned a radio and a phonograph.

Only one out of four subjects said they owned an automobile, and even fewer reported they were home owners. It seems possible the small number of owners of these items may be attributed to insufficient funds and lack of knowledge as to how to acquire these possessions.

General knowledges. The effect of illiteracy was probably most easily seen in the General Knowledges section of the Experience Inventory. It is difficult for able readers to understand the effect that inability to read has on an individual. Since most knowledge is written, the most efficient means of gathering knowledge is through reading.

There were certain areas of basic knowledge in which the experimental sample did extremely well. Ninety-eight percent could identify their right and left hand. Four out of five were able to correctly identify the number of months in the year, and almost that many were able to tell how many days there were in a week.

In using an extremely simple map, however, one-fourth of the men and half of the women had difficulty tracing a proper route from one point to another. One-fourth of the men and one-fourth of the women had difficulty identifying the railroad marking on the map.

On a map of the United States, approximately one out of four had difficulty telling where Canada was located, and half had no idea where Chicago lay in relation to Buffalo. An interesting contrast to this was the fact that four out of five identified the direction in which Georgia lay in relation to Buffalo. Obviously past residence in the southeastern part of the United States influenced the subjects. More of them were able to identify the direction in which Georgia lay (1500 miles) than Chicago (500 miles), or even Canada (Canadian border 5 miles away). Personal involvement and direct experience would seem, in this as in other areas of education, to promote more meaningful learning for the illiterate students.

Directional orientation seemed more difficult for women than men. When asked to identify the direction at their right when facing north, only one-third of the women were able to correctly make the identification. Nearly one-half of the men noted the direction correctly. When the directions were further complicated by asking the subjects to imagine turning in a different direction after facing north, only one out of four women was able to make the switch. Again, almost one-half of the men accurately responded to the task. It seems likely that men have been asked to perform this kind of task much more frequently than women. Directions would likely be less important in housework than in construction, farming, or other outdoor labor.

When directions were related to a simplified map, it is interesting to note that it was equally difficult for men and women to identify the direction from one object to another.

Although 66% had a telephone, only slightly more than half of the men were able to indicate the correct number for dialing Information or calling the operator. Women did somewhat better at this task.

Book titles. The results of this portion of the study indicated that adult city-core illiterates are not generally interested in childish fantasy, humor, or animal-type stories, nor perhaps in their adult counterpart to be found in sports, adventure and travel. They seemed more interested in titles related to such highly utilitarian topics as the improvement of themselves and their families, better jobs, how to obtain better health, and so on.

Also, many of these people are highly religious and preferred reading centered around church-related interests.

Book titles relating to the categories of Science, and Sociology, History, and Civics, evoked only moderate interest from the sample population.

The general titles used in the study of reading-associated interests seemed to be equally approved or disapproved by men and women.

A comparison of the adult city-core illiterate population with three control populations consisting of adult city-core literates, city-core children, and non-city-core children, proved that the experimental sample had much more in common in terms of preferences for book titles with the adult control group than with either of the two children's groups. Although generally passive and undemonstrative in comparison to the children's groups, the adult city-core illiterate population was pronounced in its likes and dislikes of reading materials.

WAIS, LAIS, and DEG

In general, the tests of potential used in the portion of the study describing common characteristics of the adult city-core illiterate population mirrored the difficulty these students have in test situations. The most difficult subtests were those most directly related to skills learned in school. For example, the Digit Symbol subtest of the WAIS was difficult for most of the subjects perhaps because the subject had to be able to handle a pencil quickly and accurately while using a code of symbols. These are skills which almost every school child learns but which adult city-core illiterates have not mastered.

Those subtests notable for long, difficult explanations, seemed extremely hard for the experimental population. An example of this was the DEG Arithmetic subtest. Most subjects found it virtually impossible to understand. It required skills which this population had not mastered. For example, they had trouble following the group directions (the WAIS and LAIS tests were both individually administered; the DEG is a group test). When they found what they believed to be the correct answer, they often commented aloud, and perhaps most importantly, when they were not sure what to do, they did nothing or continued doing the wrong thing because they hesitated to call attention to themselves by asking for help.

The results of the WAIS indicated a lower level of information among the adult illiterate subjects than is usually common to an adult population (Information subtest). What might be classified as the general social comprehension subtest (Comprehension) yielded the highest score of any of the WAIS subtests, even though significantly lower than national norms. On this subtest the subjects exhibited ability to understand the operations of the individual within a societal frame.

However, in all the other subtests on the WAIS the subjects exhibited low ability, particularly on the Digit Symbol and Block Design subtests. Both of these subtests are timed and both require fine muscular coordination. This combining of writing and thinking clearly under pressure (describing perfectly the traditional test situation) is an especially difficult combination for the adult city-core illiterate.

The LAIS also described the sample as being less capable in these academically-oriented activities than the population on which the test was standardized. In the subtest of Similarities and Differences, the subjects had greater than usual difficulty in finding similarities between objects even though they often recognized differences. One subtest which proved difficult, required the subject to repeat all he could remember of a short story that had been read to him. Doubtless part of the difficulty lay in the subject's inability to give sustained attention to material composed in standard English using unfamiliar concepts. Children, of course, are trained in this procedure from their earliest school days.

The Pathways subtest illustrated the difficulty the experimental sample had with a simple task, that of drawing a line on a prepared sheet of paper linking numbers in sequence. Most subjects could count as high as the numbers went, but they found it difficult to keep the sequence in mind while connecting the numbers. Adult illiterates have not had the experience school children have, as soon as they can count, of connecting dots to reveal a picture.

In general, results from the measures of potential underline the fact that adult illiterates do not possess skills often taken for granted in the educated population. They have not, for example, learned the muscle coordination necessary to manipulate a pencil; how to follow a sequence of directions or organize and retain information for immediate recall; how to concentrate on academically related tasks presented in tests. The lack of such basic skills makes independent classroom work very difficult.

Criterion Measures

Many observations regarding the tests of potential are also applicable to the standardized reading tests. First, the students had difficulty concentrating on the tests for long periods of time. Obviously they would have preferred not to take the tests. In fact, several students stopped attending classes because of them. Unfortunately these child-oriented tests are required for all ABE students in New York State.

Second, the low-level performance on these standardized reading measures seemed to indicate that many students lacked reading readiness abilities not even measured by the tests.

Third, most children, during their school years, learn the mystique of taking tests. With the adult illiterates, directions confused them, marking procedures were difficult, and using a pencil with the test record sheet a mysterious nicety.

The other criterion measure was the Keystone Telebinocular Visual Screening Test at nearpoint. Two out of three of the subjects had some degree of visual difficulty, the most frequent of which was inadequate visual acuity with either the right or left eye singly. Usable vision when both eyes were used together was better, although two out of every seven students had significant difficulty at this level.

Findings: Methodological Study

It is impossible to define and describe the effect of the various factors in the methodological study in terms of a simple cause and effect relationship. The methodological study showed that a combination of the initial teaching alphabet with adult materials paced to the learning rate of adults and supplemented by pre- and in-service training of teachers produced a gain of .35 in contrast to a gain of .31 for the control groups. However, a greater difference occurred between the gains made by the men (.24) and the women (.39), than occurred between the experimental and control groups.

As explained in Chapter IV, the research staff felt that true gains in reading ability were much higher than those measured by the standardized reading test. These observations are subjective, however, and can only be verified by future measurement with a more sophisticated objective instrument.

Initial Teaching Alphabet

The i. t. a. as presented in the Missouri Materials and amplified by the writings of the research staff at SUNYAB was used as a vehicle for reading instruction. There was little negative response to the materials with the exception of a few enrollees who registered late in the program. Their late enrollment made it difficult for them to move easily into the group, and one student especially found it difficult to accommodate himself to the new alphabet.

There can be little question that there was greater effort involved in the use of i. t. a. than there would have been had T. O. been used. Teachers had to be trained to make use of the medium and had to be assisted throughout the year in their work with i. t. a. Obtaining materials, a problem already acute for adult illiterate reading classes, became doubly so in i. t. a. and necessitated the production of many materials by the research staff.

On the other hand, a major value of the Missouri Materials/i. t. a. included the opportunity they afforded students to read in higher concept materials sooner than is usually the case in traditional-orthography basic reading materials. By contrast, in traditional methods of beginning reading instruction, a great deal of time is spent generally in learning how to attack words. Phonic rules and principles are learned so that a student may work his way through puzzling and troublesome letter combinations and ascertain the sounds to be assigned to each specific word. This means that the beginning reader must not only learn certain rules of word analysis but must also learn to develop a repertoire of alternate responses when the rules do not apply.

Because i. t. a. is more consistent in its sound-symbol relationship, students may read at a higher level more quickly. This however, might be treated as an "artificially elevated reading placement" since i. t. a. students would not be likely to read as well in traditional orthography. Two hundred hours of instruction is too short a time to be able to assess the value of i. t. a. as a reading medium for a population of adult illiterates. It took 200 hours of instruction to proceed through the first level of the Missouri Materials. It is possible that an additional 200 hours of instruction may produce longer lasting results in terms of reading gain.

Adult Materials

In addition to the Missouri Materials, the research staff wrote and transliterated comprehension exercises, additional stories, visual discrimination exercises, and supplementary readings. Songs well-known to the students were also transliterated. All these materials were oriented toward adult interests and were well received by the experimental population. The section including some Langston Hughes' poems, hints on careful buying, selected readings from the Bible, biographical sketches from the lives of famous Negroes, and topics of current sociological interests was most warmly received.

Pacing and Learning Rate

Many people assume that adults learn faster than children. The reasoning behind this lies in the assumption that adults have a broader experiential background, or in other words, "bring more to reading" than children. What has been overlooked is that illiterate adults bring to reading more failures, a greater sense of inadequacy, a poorer self-concept, and in many cases, an almost absolute certainty that they cannot learn to read as readily as the first grade child. This study has shown that adult city-core illiterates in a beginning reading program, tend to learn more slowly than children.

Undoubtedly one of the reasons for slow-paced instruction for adult illiterates is that they lack self-confidence and need time for many successful experiences before being moved ahead. Although they like to see progress, they feel insecure using materials which are too difficult for them. This attitude was particularly noticeable in one subject who was badly withdrawn in all class activities. When she received instruction paced to her individual needs, she began interacting more freely with teacher and students, and became, outwardly at least, a much happier individual.

Teacher Training

The inclusion of teacher training as a variable in the study was made necessary because of the use of the i. t. a. In addition to pre-service and in-service training, it was necessary to provide in-the-classroom assistance when appropriate. It is obviously impossible to separate training in the use of an alphabetic medium from the methodology which the medium uses. Therefore no attempt is made to divide the two in this study. The teachers were assisted through sessions meeting once each week during the first semester and once every two weeks during the second semester.

No such program of pre-service and continuing in-service training had been a part of the adult basic education program previous to this. ABE was considered an after-hours occupation, and although occasional group meetings were scheduled, no systematic program of teacher training on a weekly or biweekly basis had been undertaken. The research staff presumed that the inclusion of such a program would result in enthusiasm from the teachers and would create a Hawthorne effect, stimulating the teachers to do an unusually thorough job of teaching. These expectations were generally fulfilled.

The elevation of the adult basic education program to a position important enough to receive pre-service and in-service training resulted in enthusiasm on the part of the teachers involved in the program. Their dedication was unquestioned. They attended the in-service sessions without compensation except in the case of two special sessions for which they received some payment. There can be no question that it was difficult for the teachers to add these 4:30-6:00 PM sessions to their already busy teaching days and nights. Yet their attendance at the in-service sessions was generally consistent.

Considerable professional growth was made by the experimental teachers. Although difficult to measure objectively, the in-service program, which included observation and assistance in the classrooms when necessary, seemed to help the teachers in improving both teaching concepts and basic reading skills. A more intuitive understanding of the problems of instructing adult illiterates seemed to develop in the teachers as the year progressed. There was improvement in the student-teacher relationships and an improved class manner on the part of the teachers.

Student Reactions

Generally the students reacted favorably to the project, relating increasingly well with teachers and staff as the year progressed. The most serious objections came from a few students who enrolled late and missed the beginning lessons in the use of i. t. a. during which the class became familiar with the characters.

It was interesting that at least two students who made virtually no progress in a previous year of beginning reading instruction made significant and observable progress during the i. t. a. experiment. In interviews at the end of the experimental year they, together with many others, made known their feelings toward the program. Another student, somewhat younger than the mean, memorized at home a moving Langston Hughes' poem which had been transliterated into i. t. a., "because I liked it so much." Still another student made the comment that though he had been trying to learn to read for some time, he had made more progress during the methodological study than he had ever made before.

Various other measures of student reaction seemed to indicate positive feelings toward the instruction. Students indicated pleasure when they found they were able to read with some degree of fluency in traditional orthography, several demonstrating their proficiency by reading to members of the research staff.

In general, the attendance of the experimental sample was higher than that of the control sample. It was obvious as the project continued that the students grew more committed to their work. Their voluntary attendance at a summer program following the research year further supported this observation. Although facilities and funds were not readily available for continuation through the summer, the Adult Education Division of the Buffalo Board of Education indicated willingness to provide instruction if the students showed up in sufficient numbers. The research classes canvassed their own membership and organized two classes for the summer session, continuing on in i. t. a. Attendance remained steady throughout the summer.

Except for the difficulties of one or two students, the experimental population supported the program vigorously, being willing to make suggestions for improvement of materials, and apparently relishing their involvement in the research project.

Testing

Without doubt the most unfortunate feature of the testing relating to the methodological study was that the standardized measure of reading achievement was inadequate to the job for which it was selected. Although there are difficulties in using standardized tests with elementary youngsters, these problems are as nothing in comparison to using these same child-oriented measures with adult illiterate populations. The vocabulary of the tests is for children, using such terms as "toys," "ball," "candy," "play," and "jump," rather than more adult-centered terms such as "job," "car," "lock," "money," "work," "bus," etc.

In addition, the pictures are, understandably, child-oriented. Less understandably, some of the pictures which illustrate a word from the vocabulary list can be interpreted to fit two of the possible vocabulary choices, especially when approached from an adult point of view. For example, some adults refer to a particular type of automobile as a "wagon." Confusion is less likely for the child who attaches only one connotation to this word.

Those tests standardized on children's populations and using children's vocabulary and children's illustrations, do not test either in vocabulary or concept the reading material used to instruct adults. There is obviously some relationship, but the relationship is not as strong as it ought to be. The sight vocabulary and the reading concepts needed to score well on a children's standardized reading measure are not the concepts nor the skills commonly used by the adult beginning reader.

It almost goes without saying that the students were greatly frustrated by the administration of such standardized instruments. Many portions of the tests were very difficult for them as they sensed that the test was not testing what they had been learning. In addition, the testings were repeated by mandate after every 100-hours of instruction. The students saw little personal value in the testing and the results were not shared with them. Although subjects occasionally asked how they had done on the tests, it would undoubtedly be bad judgment to share these findings with the students as the poor quality of the tests provided little opportunity to report meaningful gains to the students.

An interesting, almost parenthetical, finding was that the women showed better progress as measured by the test than did the men. Possibly the mother's and child's vocabulary is more similar, since both center on the home and the family, than the vocabulary of the father and child. At any rate, women seemed less discriminated against than men by the child-oriented standardized reading measure.

Special Problems

There are three important problems in working with adult basic education groups. The first is attendance. Of the 72,000 functionally illiterate adults in the city of Buffalo, less than 1,000 attend any program of adult literacy.

Some obstacles to successful attendance lie in the locations of the schools. One may forget that ghetto dwellers are often as uneasy about walking ghetto streets as are strangers. Another hindrance to adequate attendance is the time of day instruction is offered. It is difficult to have adult classes during the day since most school facilities are being used by the children.

Various directors of adult school programs have suggested the advantages of child care facilities for mothers attending in the evening. They feel, and the research staff concurs, that probably more mothers would attend if they did not have to make arrangements for baby sitting.

Another problem is the frequent enrollment of new students after classes have begun. It is difficult to delay enrollment of students until the next session begins--which may be weeks or even months later. A more workable policy is to enroll the students immediately upon request in basic literacy classes even though this creates problems. The student, for example, often feels lost entering a class where everyone else knows what is going on. Particularly is this true in classes using i. t. a.

A third problem is the high rate of attrition among the adult basic education students. At present there is no organized follow-up for those students who enroll, give evidence of good progress, and then drop out before completing the program.

Findings: Study of Predictive Variables

The sample for this portion of the study consisted of 207 adults reading below third grade level and living in the city-core areas of Buffalo and Niagara Falls, New York.

Experience Inventory

Certain conclusions can be drawn from examining the variables in the Experience Inventory which correlated well with reading gain. The fact that welfare status correlated -.32 with reading gain may signify either a cause or effect relationship. In other words, those who were on welfare tended to show less gains in reading achievement than those who were not on welfare. It may be that these are the people who have not succeeded at other things and are therefore on welfare, or it may be that long years on welfare, in which they have had little opportunity to actively contact an outside environment, have caused them to be less able to profit from reading instruction. Literacy programs aimed directly at welfare recipients should take into account that when these people are compared with the population in the lowest category of an index, such as that developed by Hollingshead and Redlich, they are not qualified either in terms of social or economic characteristics to be classed as high as this lowest category. They may be classified as the "uninvolved and the unable."

In keeping with this finding is a correlation of .26 between previous educational level and reading gain. Those who have been stimulated by previous educational experience seem to be more easily stimulated in their present school situation than those who have not had such experience. Those whose parents' occupations involved some degree of communication, or who had family members at home who read to them as a child, or who read to them at the present time, are more easily taught to read than those who do not have such background.

It is obvious that reading is intimately related to other communication. The child who comes from an environment in which there has been reading, or even simple communication, has the advantage in learning to read. In like manner, the adult, whose home environment is one in which reading and communication is higher than average, tends to be able to learn to read more quickly.

The correlation between reading gain and the possession of a radio, phonograph, and ability to use a telephone, all tie in directly with the finding that a communicative environment tends to produce a person who profits from reading instruction.

A positive relationship also seemed to exist between preference for certain book titles and reading gain. The titles selected by the high achieving group tended to be somewhat more sophisticated than those selected by the low achieving group, and also to have a relationship to science and adult interests in travel, sociological, and utilitarian topics.

Those who showed the greatest ability to profit from reading instruction seemed to differ from the underachieving group by greater knowledge of measurements of time, such as days in the week, months in the year, and seasons in the year. They were also able to make better use of a map in identifying railroad markings and in finding the shortest route from one point to another. Both of these findings probably indicate the ability of subjects to profit from learning situations in their own environment, and therefore, indicate the degree to which they can profit from reading instruction.

WAIS, LAIS, and DEG

Only one of the subtests from the various measures of potential had a correlation as high as .30, and this was the WAIS Digit Span subtest. The WAIS Full Scale had a correlation of .25. The LAIS Full Scale measure had a correlation with reading gain of .23 with no subtests ranking as high. The DEG subtests were all below significance with the Full Scale score showing a correlation of .19.

The conclusion from these findings must necessarily be that none of the measures of potential used in this study correlate well enough with reading achievement to be used as a measure of learning potential for adult city-core illiterates.

Combined Variables Predictive of Reading Gain

Twenty-eight predictive variables were combined in a multiple regression using reading gain as the criterion variable. The first weighted variable which was added to the regression equation was composed of preferred titles. The second variable in the step-wise regression was the Analogy section of the Davis-Eells Games. The third was the WAIS Picture Completion subtest, the fourth the general reading ability of the family, the fifth the WAIS Picture Arrangement subtest, and the sixth was the LAIS Pathways revised score. At this sixth step the multiple correlation reached a point of .3115. Although the multiple regression equation was carried through 25 variables, the final multiple correlation only reached a .3625 level.

Within each of the subtests included from the DEG, WAIS and LAIS, there were a number of items which lacked predictive value. Predictive strength would be increased by their deletion.

Recommendations

Characteristics of Adult City-core Illiterates

These four major recommendations are the outcome of that part of the study dealing with the characteristics of adult city-core illiterates.

1. Greater stimulation and communication would improve the reading learning rate of adult city-core illiterates. Relevant discussion should be part of every class period. Students who lack verbal skills should be encouraged to express their views. The teacher can often find opportunity during such discussions to praise a student needing recognition even though his reading progress may not have warranted special notice. It would be of decided benefit to the adult illiterates if family members could be persuaded to support literacy training. Closer ties should be drawn between libraries and adult students. Book centers need to be developed in the schools, preferably in the classrooms.

2. Attendance must be improved through recruitment programs on the part of the school and community before any realistic impact can be made

on the problem of illiteracy. Effort should be made to encourage the adult illiterate to improve his education before he loses his job through possible physical handicaps developing in his middle years. It would be advantageous if adult programs were located in many areas of the city so as to be either within easy walking distance for the students or accessible by bus. If this were the case, daytime programs would doubtless decrease the fear of getting to classes, as well as the hazards of inclement weather.

For students who are recipients of welfare, enrollment could likely be improved by some subsidization of their attendance. Providing a stipend covering bus fare and break-time refreshment costs would help those from financially marginal families.

Child care should be made available during class time so that more women can take advantage of literacy training.

Within the present framework, the greatest incentive to increased attendance would seem to lie in making curricular offerings relevant to adult student needs. This should be done even at beginning reading levels by the inclusion of more adult-centered materials dealing with the home, employment, and personal and family needs.

Follow-up should be provided when students drop out of classes. This should be done either by personal visit or telephone by a sympathetic counselor, teacher, recruiter, or ABE student who can communicate the interest of the school to the student and the needs of the student to the school.

3. Beginning instructors for the adult illiterate must remember that many of the general knowledges taken for granted by most adults may not be assumed for these students.

4. Schools must provide materials and experiences having utilitarian value in order that students may feel their time investment worthwhile. Literacy materials must respond to the reasons the subjects have given for wanting to learn to read: to get more education, to get a job, to learn special skills, to be able to read the newspaper or the Bible. In other words, reading should have immediate value for them.

Methodological Study

The methodological portion of the study yielded the following eight major recommendations:

1. Standardized reading measures of beginning reading ability for adults should be constructed, making use of adult vocabulary, adult concepts, and illustrated with adult pictures. Related to this, there should be wider use of informal reading inventories in assessing the reading behavior of adult populations. This would permit the construction of test materials directly from materials the adults are reading and would be, in most situations, a more valid measure of gain than the child-oriented tests.

2. Instruction must be directed toward helping students accommodate themselves to the physical tasks required in the educational environment, as well as to mastering the cognitive skills necessary to effective learning. The adult illiterate population needs instruction in learning how to follow both verbal and written instructions. Such training might be integrated into the regular reading periods even as following directions is now included as an accepted skill to be mastered at the primary and elementary levels for children.

3. Adult literacy training must use relevant adult materials, combining good format with material which meets the expressed needs of the adult city-core illiterate population.

Many examples may be given: Instruction could explore the ways of buying a home, the meaning of mortgage interest rates, or a general explanation of the wise use of credit. A field trip to a bank or an actual bank set-up in the room might lead to lessons in writing checks, balancing a check book, and reconciling bank statements.

The students could be helped by instruction related to the driver's manual. Reading instruction involving a simplified driver's manual would permit a number of these adults to develop greater personal independence. Job opportunities would also be increased through the ability to operate an automobile.

Specific instruction in the use of the telephone book, including practice in alphabetizing, would be helpful. It is also obvious that map reading skills need to be taught.

The sample population was interested in personal improvement, family improvement, better jobs, better health, religion, science, historical and civic events, and other areas of learning which bear upon their present situation.

In preparing these materials the findings of the telebinocular screening test show that clarity of print and style of materials should be included in an adult format.

Children often find reading pleasant when the material is of special interest to them, such as tales of fantasy or adventure. Adult illiterates, on the other hand, generally have little interest in the topics children find so delightful, and therefore, do not derive pleasure from such reading matter. It is important that adult-oriented materials be provided for them. If adults are interested in hints on careful buying or selected readings from the Bible or other areas, these should be made available to them in an agreeable and acceptable format.

4. Instructional programs for adult city-core illiterates must pace reading to the abilities of the adult learners. These programs must include low-level materials which will insure success from the beginning. Adults need as much (or more) meaningful repetition as children, in order to learn effectively. Also, like beginning first-grade children, many adults need readiness training before beginning actual reading instruction. It is very easy to over-estimate the speed with which adults learn;

thus it is important for the teacher to realize that learning must be paced to the abilities of the students.

5. Frequent reinforcement and short-range goals should be an integral part of adult literacy instruction.

Many adult city-core illiterates maintain that they want to learn to read better so they can get a better job. This is an extremely long-range goal, and it takes a great deal of personal determination to fulfill it. Children voice somewhat similar aspirations and goals when they say they want to learn to read better in order to go to college, or become a nurse, or doctor, or some other long-range goal. No one takes them seriously, however, in terms of expecting them to apply themselves with daily diligence to the achievement of such goals. Instead, short-range goals and reinforcement for reading are provided. Short-range goals and reinforcements are just as necessary for the adult who is learning to read.

6. The competencies of adult basic education teachers should be improved through a program involving lectures and discussions, demonstrations of teaching techniques, observations in the classroom, and help for the teacher in relating the lecture, discussion, and demonstration to teaching.

There are several suggestions as to how teacher training might be improved. Teachers should be made aware of student interests early in the year. Explicit exposition of these interests are needed throughout the year.

Teachers and supervisors should have a good knowledge of the strengths and weaknesses of the materials with which they are going to work before instruction begins. In the research program the Missouri Materials were not fully evaluated at the time of the pre-service meetings, partly because they were received shortly before instruction. An example of one of the weaknesses of the materials was the excessive time required by the teacher's manual in reinforcing auditory discrimination skills. This weakness should have been pointed out to the teachers before instruction began.

Observations and conference times with teachers should be scheduled and tied in with the in-service program. In this way, teachers would be in a better position to present the specific techniques discussed at the in-service meetings.

In-service training should include help in the use of audio-visual materials. Although teachers may have had audio-visual courses, this does not necessarily mean they feel at ease with these materials. Some teachers in the experimental program felt insecure with the tape recorder, although they had had previous training in its use.

7. Two hundred hours of instruction is too short a period of time to satisfactorily evaluate the use of the i. t. a. as an instructional medium. It should be tried for at least 400, and possibly 600 hours, in

order to fully estimate its value. The i. t. a. proved to be well accepted by the population and though it involved somewhat greater effort in teacher training and material acquisition than T. O., it seemed to permit the subject to read at a higher concept level sooner than is ordinarily the case.

8. A special teacher should be assigned to work with in-coming students for a week or two in small groups, orienting them to the class work as well as to the building and the educational situation in general. This recommendation becomes especially necessary when using the i. t. a. in order to provide means of special assistance and encouragement for those who enroll late.

Study of Predictive Variables

These two recommendations come from the portion of the study dealing with the variables predictive of reading success.

1. None of the variables utilized in this research project proved to be satisfactory predictors of reading gain. Even Full Scale WAIS, LAIS, and DEG scores correlated with reading gain at a low level.

2. Other instruments need to be created which would have greater reliability in differentiating the learning capacities of adult city-core populations. An item analysis should be carried out involving all the subtests included in the regression analysis, and those items found to be significantly predictive should be combined and adapted through a new format which would be tested for use with an experimental adult city-core population.

Summary

This three-part study which involved a total of 207 adult city-core illiterates from Buffalo and Niagara Falls, New York, reading below third grade level centered its attention on: (a) the educational characteristics, knowledges and abilities of adult city-core illiterates important to the improvement of reading materials and reading programs; (b) a methodological study of a beginning reading program using the i. t. a. with adult-centered materials paced to adult learning rates and providing pre- and in-service training for teachers; and (c) the identification of variables predictive of reading gain.

The subjects were found to range from 18 to 81 years of age, with a mean age of 46.6 years. The mean residence in western New York was 17.4 years, and the subjects generally came from a southeastern rural non-reading background. Most of the subjects indicated they wanted to learn to read for highly utilitarian reasons, such as getting more education or getting a job.

Most of the subjects had a telephone and television set and many also had radios and phonographs. Only one-fourth reported that they owned an automobile and even fewer were home owners.

In terms of general knowledge most subjects could identify their right and left hands, the number of months in the year, and the number of days in the week. However, a great number had difficulty with simple maps and general directional orientation.

In terms of reading interests the adult city-core illiterate seems interested in reading which concerns self-improvement and improvement of his family, better job opportunities, good health and religion. He is somewhat less interested in science and sociology, history and civics, but preferred these to titles representing childish fantasy, humor, animal-type stories, sports stories, adventure, and travel. Book title preferences of adult illiterates seemed to be about the same as those of literate adults in the city-core area. These preferences differed substantially from the choices of children's beginning reading groups in city-core and suburban schools.

The standardized tests and the tests of potential which were used in this study showed that the subjects lacked a number of skills helpful to efficient and effective test taking. They had trouble with fine muscle coordination in holding a pencil, working with the answer blank, and using the test folder. They had not developed the skills of concentration nor the ability to follow a sequence of events necessary to performance in many of the test tasks.

The individual tests indicated that the subjects usually had a low level of general information, as well as low skills level. Their lowest abilities were on the WAIS Digit Symbol and Block Design subtests, which require ability to perform writing-type tasks and to think clearly under pressure. They simply are not well adjusted to the tasks involved in test taking.

The administration of the Keystone Telebinocular visual screening test indicated there was high frequency of inadequate visual acuity with either eye singly, as well as other visual inadequacies.

In the methodological study, gains by the experimental group were not significantly greater than those made by the control group. Subjective observation, however, indicated that the experimental instruction was well received by the students. Adult materials incorporating the use of the i. t. a. illicited positive feelings from the subjects, and teacher training seemed to be well received. Enthusiasm on the part of teachers and students was made evident through manifestations of personal interest and concern.

Final conclusions should be withheld regarding the use of the i. t. a. with adult illiterates until its effect can be measured for more than a 200 hour period of instruction.

One of the major disappointments in the methodological study was the inadequacy of the standardized testing instruments used to measure pre- and posttest gains. The child-oriented tests used in the study did not meet the needs of the adult sample in terms of vocabulary, concepts, use of format, and pictures. Students resisted the frequent administration of such tests. This led to the recommendation that measures of adult beginning reading abilities standardized on adult populations need to be developed and put into use as promptly as possible.

Additional problems are recruitment and attendance, and the policy of continuous enrollment. Too few people are being attracted by present literacy training programs. Less than 1,000 of the 72,000 functionally illiterate adults in the city of Buffalo are involved in any on-going program of adult basic education. The problem of continuous enrollment creates the need for special receiving classes where new students can be oriented to materials and to the school upon their matriculation.

The most important finding in the study of the individual predictive variables is that those students learn to read more rapidly who have had a relatively higher level of communication in their backgrounds and whose present family situation tends to stimulate interest in reading. Previous education, high communicative level of parents' jobs, reading in the home, and possession of such communicative instruments as radio, television, telephone, and phonograph, aid the adult city-core illiterate to improve in his reading ability.

There tended to be a correlation between reading gain and certain book title choices from the Experience Inventory. Each of the six predictive titles (Let's Go to Hawaii, A Trip in Space, 100 Ways to Make Money, Experiments With Electricity, Our Greatest President, How Science Saves Lives) seemed to connote some element of sociological thrust or risk.

The two variables from the general knowledges section of the Experience Inventory which correlated well with reading gain are the subject's understanding of such time measures as the number of days in the week, weeks in a month, and months in a year; and his ability to read a map. These would seem to indicate the subject's ability to learn from his environment.

Various subtests in the WAIS, LAIS, and DEG showed a correlation with reading gain between .20 and .30, but since these are tests of academic potential the most obvious finding of the study is that they are not satisfactory predictors of ability to profit from reading instruction. Different instruments must be constructed to discriminate between slow and rapid learners, among the adult city-core illiterate population.

This study has pointed out that a number of adults living in the city-core areas classified as functionally illiterate must be reached, trained, and tested by newer approaches. This study identifies and describes the adult basic education student, points out steps that may be taken to improve methodological instruction, and enumerates the need for additional materials and tests to assist in the instructional program.

Relationships Between This Study and Related Research

The findings of the Buffalo study would seem to support earlier opinion and research (see Chapter II) as follows:

Potential. Hunt's refutation of fixed intelligence, Pettigrew's stress on assuming equivalent backgrounds, and Deutsch's conclusions that language variables should be considered by-products of social experience rather than indices of basic ability or intellectual level all seem to be supported by the findings of the Buffalo study.

Tests. Support is also given to the earlier recommendation by Demming and Pressey that test batteries appropriate to adult abilities be developed, and to Brice's view of the pressing need for field tests.

Methodology and materials. Gray's 1930 suggestions that informal reading materials, carefully graded adult readers with wide appeal, and abundant supplementary materials for use in adult literacy classes was underscored by research in the 1940's, 1950's, and 1960's conducted by Goldberg, Hilliard, Brooks, Brazziel, and Greenleigh. The recommendations from these earlier studies have been underscored by the current Buffalo research, namely: (a) that there are not enough materials for this population (Hilliard, Brooks, Brazziel, Greenleigh); (b) that materials be based on needs and interests (Goldberg, Hilliard, Brooks, Brazziel, Greenleigh); (c) that different materials and tests are needed for the disadvantaged (Hilliard, Greenleigh); and (d) that there be careful selection of teachers (Goldberg, Greenleigh).

Research involving the use of the initial teaching alphabet (i. t. a.) has been widespread with children in both the United States and England, with somewhat more positive results in England than in America. However, in those studies conducted with adult populations in the United States the results generally have been positively significant in favor of i. t. a. Such support has been reported by Pahrman, Hastings, Stevenson, Hannenberg, Clark, and Heding. Although not significant, the results of the Buffalo study would tentatively suggest corroboration of these earlier findings.

Teacher pre-service and in-service training. In studies concerned with the use of pre-service and in-service training results have been positive with the teachers of both children and adults. The findings of the Buffalo research tend to support the findings of Heilman, Reid, Morrill, and Deutsch with children; and of Goldberg, Brooks, Greenleigh, and Heding with adults--namely, that such training is an integral part of a successful program for the improvement of instruction.

Recommendations for Further Research

Some of the areas for additional research suggested by the Buffalo study are listed below in the hope that other researchers will give them attention.

1. Combination programs. Research studies should be conducted which would examine the combined effect of early childhood education, parent education, remedial education for children in school, and literacy training for parents. The results of such a comprehensive investigation should make considerable impact on the reading behavior of both children and adults since the Buffalo study shows that the adult learns better when his family is involved with reading, and children learn better when parents are interested and involved in their learning.

Also, this kind of large-scale research could be broken into smaller studies which might: (a) Examine a program of parent education in which parents from city-core areas are taught to cope with problems of child rearing, particularly as they relate to educational matters. Such a program might be expected to show advantages for city-core children and adults. (b) Examine early childhood development (age 2-4) as it relates to later success in learning. The Buffalo study indicated that illiteracy often has roots in childhood deprivation.

2. Linguistic analysis. A linguistic analysis of the language used in city-core areas would be helpful in preparing reading materials for adult city-core illiterates.

3. Recruitment. It is important to study programs of recruitment to see whether the provision of child-care centers and transportation assistance would significantly increase attendance for literacy training.

4. Adult materials. Studies are needed which would further investigate the effect of adult vs. juvenile materials in literacy work with adult city-core illiterates.

5. Teacher training. The Buffalo study points up the need to investigate methods of teacher training.

6. Readability formula for adults. A readability formula for low-level adult materials is needed.

7. Materials study. A thorough study of materials presently available for instructing adult illiterates is needed. This should include an annotated bibliography explaining areas of use, levels of difficulty, general approach, etc.

8. Adult choice of reading materials. There should be a study involving selection by adult illiterates of actual books. In the Buffalo study subjects were asked to tell which fictitious titles they would prefer to read, but there is a question as to which books they would actually choose if given the choice.

9. Methodology: comparative studies. A series of studies similar to the first grade studies which investigated reading methodology for beginning first grade children would be of considerable help in determining which of the numerous methods of instruction for adult illiterates would be most profitable. Included in such research should be programmed instruction, linguistic instruction, machine type instruction, packaged instruction, as well as the more traditional approaches.

10. Methodology studies: basic reading elements for ACCI. A study should be conducted to determine the basic reading elements of a proper instructional program for adult city-core illiterates. The Buffalo study has seemed to indicate that many adult illiterates are in need of certain underlying and preliminary learnings before they begin the traditional or classical beginning reading program. A study which would identify these basic elements and program their learning for the adult illiterate would be of considerable value.

11. Methodology studies: verbal emphasis. A study needs to be made of the effect of beginning reading instruction which involves adult illiterate students in vigorous class discussions and helps them learn both how to listen and how to express themselves.

12. Methodology study: added communicative instruments in the home. A study needs to be made of the effect of added communicative instruments in the home. During the Buffalo research it was found that students who had radios, phonographs, television, and telephones in the home profited from reading instruction more readily than those who did not have these instruments. Instruction which involved the use of special phonograph records or which was designed to center or call attention to the use of communicative instruments might prove to be of assistance in learning to read.

13. Methodology study: longitudinal study of the effects of i. t. a. Much study is needed to test the long-range effects of the initial teaching alphabet for instruction with adult city-core illiterates. The slightly greater gains of the i. t. a. experimental group in the Buffalo study are inconclusive.

14. Testing: comparing standardized and informal reading inventory. A comparison is needed of the various standardized and informal reading tests presently in use with adult illiterates.

15. Testing: "true" gain. Based on the previous recommendation, a study could investigate the amount of "true" gain which may be expected from adult city-core illiterates in a set period of time, such as 200 hours, of reading instruction.

16. Testing: item analysis of tests of potential. An item analysis of tests of potential is needed. This would provide the first step toward the creation of more accurate tests of ability to profit from reading instruction.

17. Testing: learning potential. Reliable tests of learning potential should be created and tried.

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Appendix A: Commercially Unobtainable Instruments Used in the Study

- Experience Inventory--Various Formats
    - For Adult Illiterate Sample (ACCI)
    - For City-core (CCC) and Non-city-core (CNCC) First Graders
    - For Adult Literates (ACCL)
- Instructions for Scoring EI Room Maps
- Suggestions for Revisions of the EI
- Experience Inventory Forms
    - Adult Illiterates (ACCI)
    - First Grade Children (CNCC & CCC)
    - Adult Literates (ACCL)
- Davis-Eells Games

Experience Inventory--Various Formats

For adult city-core illiterates sample (ACCI). The Experience Inventory was revised several times in order to achieve an efficient format for use with the adult illiterate sample. Thus the differences between the original format as given in Berke's dissertation and that presented here. Effort was made, however, to retain as much of the original inventory as possible. Copies of the three Experience Inventories finalized for each population are included in this Appendix.

For city-core (CCC) and non-city-core (CNCC) first graders. The original inventory, which included such questions as "What was the chief cause of your reading difficulty?," had to be revised before it could be administered to groups of first grade children.

As may be noted in examining the final instrument used with most first grade pupils (the first revision involved written questions and a much-too-difficult format for city-core first graders), the answer options are in pictures where possible. When picture answers were impossible single words were presented. The format for the reading-associated book titles was also changed to eliminate confusion under group administration.

The sections adaptable for use with the first grade populations included:

a) With whom do you live?
b) How many brothers and sisters do you have?
c) Knowledges: right and left
    north and south
    number of days in the week
    number of months in the year
    number of seasons in the year
d) Reading ability of father, mother, brother(s), sister(s)
e) Reading habits of relatives in relation to child
f) Reading-associated book titles

For adult literates (ACCL). Further adjustments in format had to be made before the Experience Inventory could be administered to the adult literate population.

Some questions had to be put in the past tense ("Who could read at your house?," "Who read to you almost every day?"); others in the original inventory, though not suitable for the first grade group, were usable with the adult illiterates ("In your present family situation can anyone else read?" and "Why do you want to learn to read better?"). The instrument was thus adjusted for group administration to adult literates reading at approximately the seventh or eighth grade level.

Instructions for Scoring EI Room Maps

Difficulty in evaluating and scoring room drawings led to the following 2/6/67 revision.

Administration. When administering the question, it was suggested to the subject that he first draw a map of the room. After his general room-shape was on paper he was told to draw in door, windows, examiner/subject desk or table, and examiner and subject. (The examiner was cautioned to allow time for each item to be placed on the drawing before mentioning the next item.)

It was recognized that a lower level of performance was accepted in specifying what should be placed in the room. However, it was a question of how many subjects would respond to or even recognize the task if the assignment were given all at one time.

Criteria for scoring identification section.

1. Walls: (a) Must have four; (b) should have no ears; (c) must join or nearly join; (d) must reflect square or rectangular shape of room. 1 pt.
2. Door: Anything which identifies the door. 1 pt.
3. Windows: Any mark which identifies window(s). 1 pt.
4. Desk: Any mark which subject places in response to word "desk"/"table." 1 pt.
5. Examiner: Any mark which places examiner. 1 pt.
6. Subject: Any mark which places subject. 1 pt.

Criteria for scoring relationship section.

1. Walls: Four walls must be shown in proper relationship. 1 pt.
2. Door: Must be placed near or on proper wall. 1 pt.
3. Windows: Must be placed in relation to each other near or on proper wall. 1 pt.
4. Desk: Must be placed with reference to proper wall. 1 pt.
5. Examiner: Must be placed properly with reference to desk. 1 pt.
6. Subject: Must be placed properly with reference to desk. 1 pt.

Criteria for scoring number of objects.

1. General: Give maximum of 2 pts. for duplicated objects.
2. Walls: Must have four. 1 pt.
3. Door(s): May receive a maximum of 2 pts. if more than one door identified. 1 or 2 pts.
4. Windows: Give a maximum of 2 pts. if more than one window indicated. 1 or 2 pts.
5. Examiner/subject: May receive a maximum of 2 pts. if both examiner and subject are shown.
6. Other objects: Give one point for each additional object with a maximum of 2 pts. given for the same type of object identified any number of times. (Maximum of 10 pts.)

Recommendations for Revisions in the EI

Inevitably, when an instrument such as the Experience Inventory is administered to a relatively unknown population, observations occur as to "how it could have been better." The following suggestions as to possible refinements of the Experience Inventory are based on the observations of the examiners and the statistician as the EI was given and as its results were tallied.

General. A "don't know" category should be provided for answers to such questions as "What was the chief cause of your reading difficulty?," since in this case the subject might not be able to give an accurate assessment of the chief cause.

Identification and background. In the two sections "Why subject had difficulty with reading" and "Why I wanted to learn to read" the "+" and "-" correlations of eight or nine items add up to zero. Therefore, either +'s or -'s should be examined separately or "total reasons" as a category should be eliminated in processing the data.

An attempt might be made to explore the cultural-difference factor more thoroughly, i. e., is there a more precise way of estimating the subject's experience within this particular culture? How much time was spent under the support of one (or both) parents? What was or is the routine of his day and his work? What are the physical conditions of his home? At what is the subject now employed?, How long has he been employed in his current (or most recent) job? Has he had military service? And more specifically, how many jobs has the subject held in which he worked for one month or longer. Data from the question "Have you had any particular kind of training for a job?" and "If 'yes' specify..." had to be discarded because they were too nebulous. The job information that was reported could probably have been more accurate had the subject been asked to specify how long he had been at his present employment: 1 month, 6 months, 1 year, or more than a year. Possibly the question could be revised to read: "Tell me all the jobs you've had in which you've worked one month or longer."

It is also suggested that information gained regarding the organizations (including churches) to which the individuals belonged might give a more complete picture of the sample.

Performance and functional knowledge. Considering the large number of subjects who owned television sets, the following types of questions might yield information as valuable as that gleaned from the book titles section: (a) How many nights a week do you watch TV?, (b) How much time do you spend watching?, (c) Which types of programs do you prefer (news vs. sports, etc.)?, and (d) Name three television programs you watch regularly.

E. I. #1: Form administered to adult illiterates in 1966-67. (EI: ACCI)

Examiner____________________

Date____________________

EXPERIENCE INVENTORY

I. IDENTIFICATION AND BACKGROUND

Name:____________________ School____________________

Address____________________ Teacher____________________

Tel. #:____________________

Birthdate___/___/___ C. A.__________ Place of Birth____________________

1. By whom were you raised?:____________________

2. Occupation of Parent(s) or Guardian (indicate for each when given):
   a. father________________ b. mother________________ c. other__________
   ____

3. Number of brothers________________ 4. Number of sisters________________

5. Did you have all you needed to eat? (always - usually - seldom - never)

6. Your previous school attendance: 0-1-2-3-4-5-6-7-8-9-above

7. About how well were the members of your immediate family able to read:

   A. Mother: Read and write name_____, Read and write letters to people______, Read passages from the Bible________.

   B. Father: Read and write name______, Read and write letters to people______, Read passages from the Bible________.

   C. Sisters: Read and write name______, Read and write letters to people_____, Read passages from the Bible_______.

   D. Brothers: Read and write name______, Read and write letters to people_____, Read passages from the Bible_______.

   E. Other relatives in the home: Read and write name_______, Read and write letters to people_______, Read passages from the Bible_______.

   F. To which of the relatives in your childhood home did you feel closest?
   ____________________.

   G. What was the reading level of that person? Read and write name________, Read and write letters to people______, Read passages from the Bible______.

8. What was the chief cause of your reading difficulty:

   A. Personal disinterest__________ E. Illness________________

   B. Parental disinterest__________ F. Needed at home________________

   C. No school available__________ G. Miscellaneous________________

   D. Poor teaching________________ H. Foreign-born________________

9. How long have you lived in this area?: 0-1-2-3-4-5-6-7-8-9-10 - if over 10, specify________.

10. In your present family situation, can anyone read?: Yes_____ No_____

11. Who?: Spouse____ 12. Child(ren)_____ 13. Other relatives in the home_____, 14. Other___________.

15. Do they read aloud to you?: Much______, seldom_______, never_______.

16. What do they read to you?: Newspaper_______ (sports, funnies, news, ads, other), Bible_____, Magazines_______, books_______, other________.

17. Why do you want to learn to read?

to get a job_____
to read the Bible________
to read to my children________
other__________

to get more education__________
for pleasure________
to understand the news/to be better informed____________

18. Have you had any particular kind of training for a job?_____________________
(yes or no)

If "yes" specify____

19. What kind of jobs have you had?____

____

II. POSSESSIONS AND FUNCTIONAL KNOWLEDGE

1. If your telephone is out of order what would you do?________________________

____

2. Do you have a car______________?

3. How much would your car insurance cost per year?_______________

4. Do you have a TV?____________ Radio?______________

5. If you felt that a TV or radio program was bad; that is, that it might hurt or offend someone, whom would you call to complain to?_________________________

6. Do you have a record player?________________

7. At what speed do you usually play your record player?______________

8. Approximately how cold (in degrees) does the non-freezer part of a refrigerator get?________________

9. Owning a house is a big investment for most people. Most people don't have the cash to pay for the house. Where do they borrow the money to buy their house?_____________________________

III. GENERAL KNOWLEDGES

1. Orientation:

A. You are now facing north. Point to the right.____________ At which direction are you pointing?____________

B. You are now facing north. If you were to walk one block, then turn to your left, what direction would you be facing?____________

2. Orientation to maps and charts:

A. This is a map of a little town, perhaps similar to the area where you live. Now just suppose you live in this little town. Let's pretend you live here. (point to house in upper right corner) Now show me the way you would most easily be able to get to the school which is here (pointing) on the map.__________
Show me where you think the railroad is located.________
In which direction would you walk to go from the school to the lake?_____

B. On a map of the United States, would you find Buffalo (point to it) above (North) of Canada, or below it______, to the right or left of Chicago_____, above or below Georgia________.

C. Draw a map of this room and show me where we would be in the room. Chart for door______, windows_______, examiner's desk/table_____, and for the location of the examiner and student________.

3. Time orientation:

How many days are there in a week?________, Months in a year?_________
How many seasons are there in a year?________

4. Commonly used telephone numbers:

A. What number would you call for information:__________

B. What number would you need to call the operator:________

5. Rhythm:

"Listen to this, and then tap as I have done."

A. 1-2 3-4-5
L L S S S __________

B. 1-2 3-4-5
S S L L L __________

6. **Reading Associated Interests:**

In each pair of the titles below, which of the stories would you rather read?

__ 1. King of Horses	__ 2. Our Next President
__ 1. A Surprise for Dick & Jane	__ 2. A Job I Liked
__ 1. The Witch in the Forest	__ 2. Being a Better Christian
__ 1. Jokes and Funny Stories	__ 2. Let's Go to Hawaii
__ 1. The Duck That Could Not Fly	__ 2. A Trip in Space

__ 1. Bombs, Bullets & Bread	__ 2. How to Raise Children
__ 1. These Are Your Rights	__ 2. The Life of Jesus
__ 1. The Story of World War II	__ 2. Hunting Stories
__ 1. Up From the South	__ 2. What Makes It Rain
__ 1. How to Have a Happy Home	__ 2. Heroes of the Old Testament

__ 1. How to Eat Better	__ 2. Lost in a Cave
__ 1. Better Health & Longer Life	__ 2. Fun With Numbers
__ 1. Stories of the Bible	__ 2. The Winning Team
__ 1. The Story of the Cross	__ 2. The Story of the Stars
__ 1. Fishing Tales	__ 2. Science and You

__ 1. Puff Gets Lost	__ 2. Lincoln, Man of Peace
__ 1. Animals I Like	__ 2. 100 Ways to Make Money
__ 1. My Funniest Moments	__ 2. The Beloved Disciple
__ 1. The Horse Who Couldn't Bark	__ 2. Football Champs
__ 1. Tom and Jane Help Father	__ 2. Experiments With Electricity

__ 1. March for Freedom	__ 2. Ways to Improve Your Appearance
__ 1. Soldiers for Peace	__ 2. Jesus and the Woman at the Well
__ 1. Our Greatest President	__ 2. Dead Man's Treasure
__ 1. The Fight for Freedom	__ 2. How the Weather is Changing
__ 1. Learn to Fix TV Sets	__ 2. Missionaries Paul & Silas

__ 1. How to Have a House of Beauty	__ 2. Touchdown
__ 1. Train Yourself for a Better Job	__ 2. The Dinosaur Book
__ 1. The Ladder to Heaven	__ 2. Floating Down the Mississippi
__ 1. When Adam Walked With God	__ 2. How Science Saves Lives
__ 1. Our Trip to Canada	__ 2. Life in the Ocean

E. I. #2b: Revised form administered to first-grade children in 1968.

Name ______________________ Age

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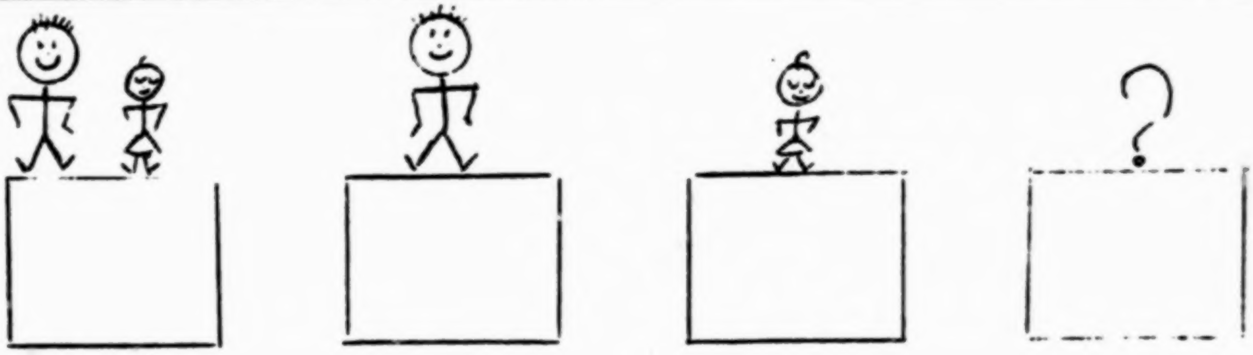

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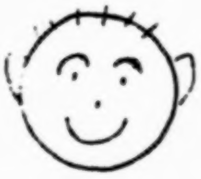

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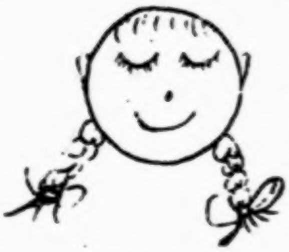
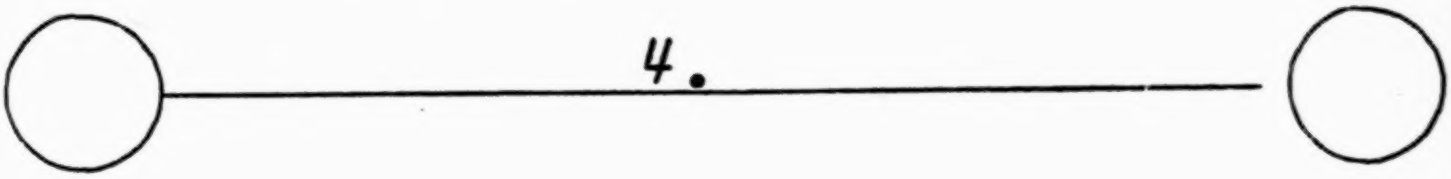




5. NORTH SOUTH EAST WEST

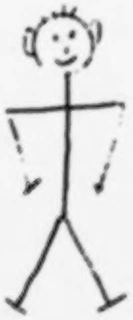
6. DAYS

7. MONTHS

8. SEASONS

Page 2

9.



YES ☐ NO ☐ ? ☐

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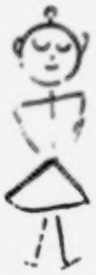

YES ☐ NO ☐ ? ☐

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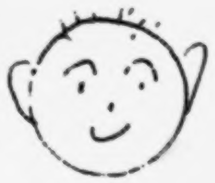

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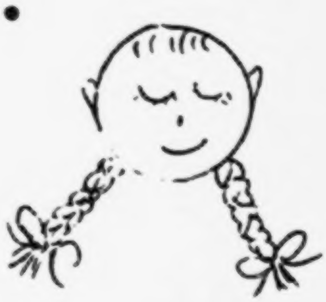

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Page 3

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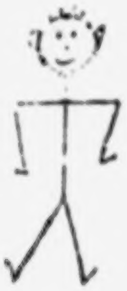
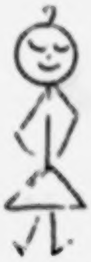


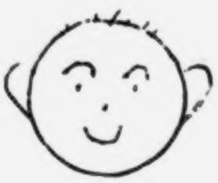
YES ☐ NO ☐

14.



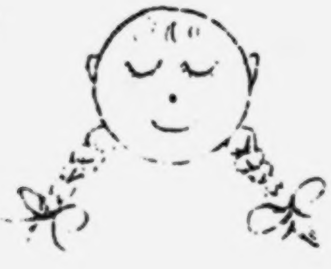
YES ☐ NO ☐

15.



YES ☐ NO ☐

16.



YES ☐ NO ☐

1.	☐ King of Horses	☐ Our Next President
2.	☐ A Surprise for Dick and Jane	☐ A Job I Liked
3.	☐ The Witch in the Forest	☐ Being a Better Christian
4.	☐ Jokes and Funny Stories	☐ Let's Go to Hawaii
5.	☐ The Duck That Could Not Fly	☐ A Trip in Space
6.	☐ Bombs, Bullets and Bread	☐ How to Raise Children
7.	☐ These Are Your Rights	☐ The Life of Jesus
8.	☐ The Story of World War II	☐ Hunting Stories
9.	☐ Up From the South	☐ What Makes It Rain
10.	☐ How to Have a Happy Home	☐ Heroes of the Old Testament

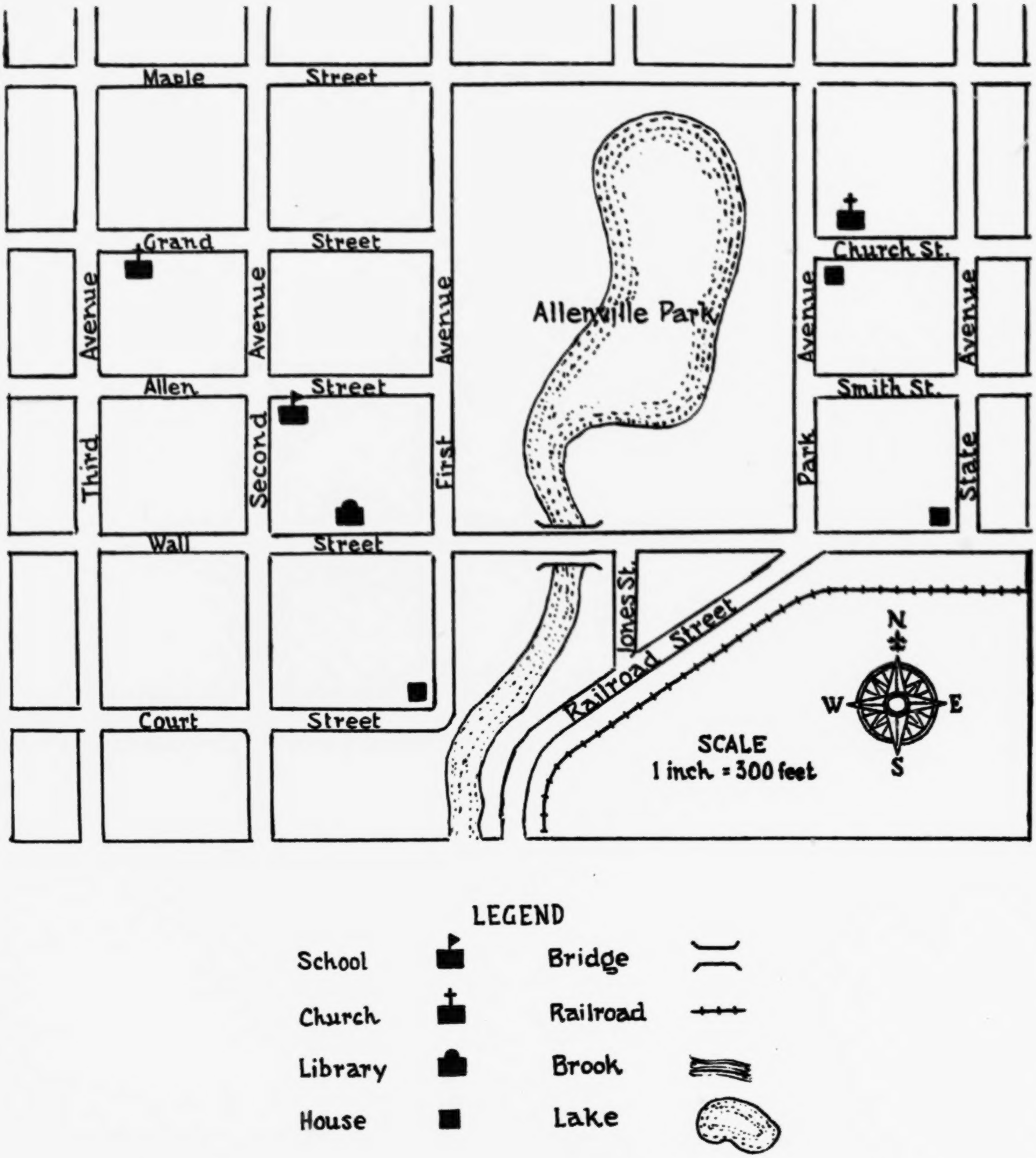
(EI: CNCC & CCC)

11.	☐ How to Eat Better	☐ Lost in a Cave
12.	☐ Better Health and Longer Life	☐ Fun With Numbers
13.	☐ Stories of the Bible	☐ The Winning Team
14.	☐ The Story of the Cross	☐ The Story of the Stars
15.	☐ Fishing Tales	☐ Science and You
16.	☐ Puff Gets Lost	☐ Lincoln, Man of Peace
17.	☐ Animals I Like	☐ 100 Ways to Make Money
18.	☐ My Funniest Moments	☐ The Beloved Disciple
19.	☐ The Horse Who Couldn't Bark	☐ Football Champs
20.	☐ Tom and Jane Help Father	☐ Experiments With Electricity

(EI: CNCC & CCC)

	☆	☺
21.	☐ March for Freedom	☐ Ways to Improve Your Appearance
22.	☐ Soldiers for Peace	☐ Jesus and the Woman at the Well
23.	☐ Our Greatest President	☐ Dead Man's Treasure
24.	☐ The Fight for Freedom	☐ How the Weather is Changing
25.	☐ Learn to Fix TV Sets	☐ Missionaries Paul and Silas
26.	☐ How to Have a House of Beauty	☐ Touchdown
27.	☐ Train Yourself for a Better Job	☐ The Dinosaur Book
28.	☐ The Ladder to Heaven	☐ Floating Down the Mississippi
29.	☐ When Adam Walked With God	☐ How Science Saves Lives
30.	☐ Our Trip to Canada	☐ Life in the Ocean

(EI: CNCC & CCC)


Maple Street
Grand Street
Allen Street
Wall Street
Court Street
Church St.
Smith St.
Third Avenue
Second Avenue
First Avenue
Park Avenue
State Avenue
Allenville Park
Jones St.
Railroad Street
N
W
E
S
SCALE
1 inch = 300 feet
LEGEND
School
Church
Library
House
Bridge
Railroad
Brook
Lake

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E. I. #3: Form administered to adult literates in 1968.

Name____Age______________

School______________________Teacher______________________Date________

1. With whom did you live as a child? Father______Mother_____Other_______

2. How many brothers did you have?_________How many sisters?____________

3. Who could read at your house?

   Could your father read? yes____ no____ don't know____

   Could your mother read? yes____ no____ don't know____

   How many of your brothers could read?_____ don't know_____

   How many of your sisters could read?_____ don't know_____

   Could anyone else at your house read? yes____ no____ don't know____

4. Did your father read to you almost every day? yes____ no____

   Did your mother read to you almost every day? yes____ no____

   Did any of your brothers read to you almost every day? yes____ no____

   Did any of your sisters read to you almost every day yes____ no____

   Did anyone else read to you almost every day? yes____ no____

5. In your present family situation can anyone else read? yes____ no____

   Who: Spouse_____ Child(ren)____ Other relatives in the home____
   Other_____

6. Why do you want to learn to read better?

   to get a job____
   to read the Bible____
   to read to my children____
   other_____
   to get more education_____
   for pleasure____
   to understand the news/
   to be better informed______

7. Put a cross in the circle on the left side of the page.

8. When you are facing north, what direction is behind you?
   north______south______east______west______

9. Look at the map of the little town. Mark the shortest way from the house to the school. Put an "X" where you think the railroad is.

10. How many days in a week?_______

11. How many months in a year?______

12. How many seasons in a year?______

___ 1. King of Horses
___ 2. A Surprise for Dick and Jane
___ 3. The Witch in the Forest
___ 4. Jokes and Funny Stories
___ 5. The Duck That Could Not Fly

___ 6. Bombs, Bullets and Bread
___ 7. These Are Your Rights
___ 8. The Story of World War II
___ 9. Up From the South
___10. How to Have a Happy Home

___11. How to Eat Better
___12. Better Health & Longer Life
___13. Stories of the Bible
___14. The Story of the Cross
___15. Fishing Tales

___ 1. Our Next President
___ 2. A Job I Liked
___ 3. Being a Better Christian
___ 4. Let's Go to Hawaii
___ 5. A Trip in Space

___ 6. How to Raise Children
___ 7. The Life of Jesus
___ 8. Hunting Stories
___ 9. What Makes It Rain
___10. Heroes of the Old Testament

___11. Lost in a Cave
___12. Fun With Numbers
___13. The Winning Team
___14. The Story of the Stars
___15. Science and You

2.

☆

__16. Puff Gets Lost
__17. Animals I Like
__18. My Funniest Moments
__19. The Horse Who Couldn't Bark
__20. Tom and Jane Help Father

__21. March for Freedom
__22. Soldiers for Peace
__23. Our Greatest President
__24. The Fight for Freedom
__25. Learn to Fix TV Sets

__26. How to Have a House of Beauty
__27. Train Yourself for a Better Job
__28. The Ladder to Heaven
__29. When Adam Walked With God
__30. Our Trip to Canada

__16. Lincoln, Man of Peace
__17. 100 Ways to Make Money
__18. The Beloved Disciple
__19. Football Champs
__20. Experiments With Electricity

__21. Ways to Improve Your Appearance
__22. Jesus and the Woman at the Well
__23. Dead Man's Treasure
__24. How the Weather is Changing
__25. Missionaries Paul & Silas

__26. Touchdown
__27. The Dinosaur Book
__28. Floating Down the Mississippi
__29. How Science Saves Lives
__30. Life in the Ocean

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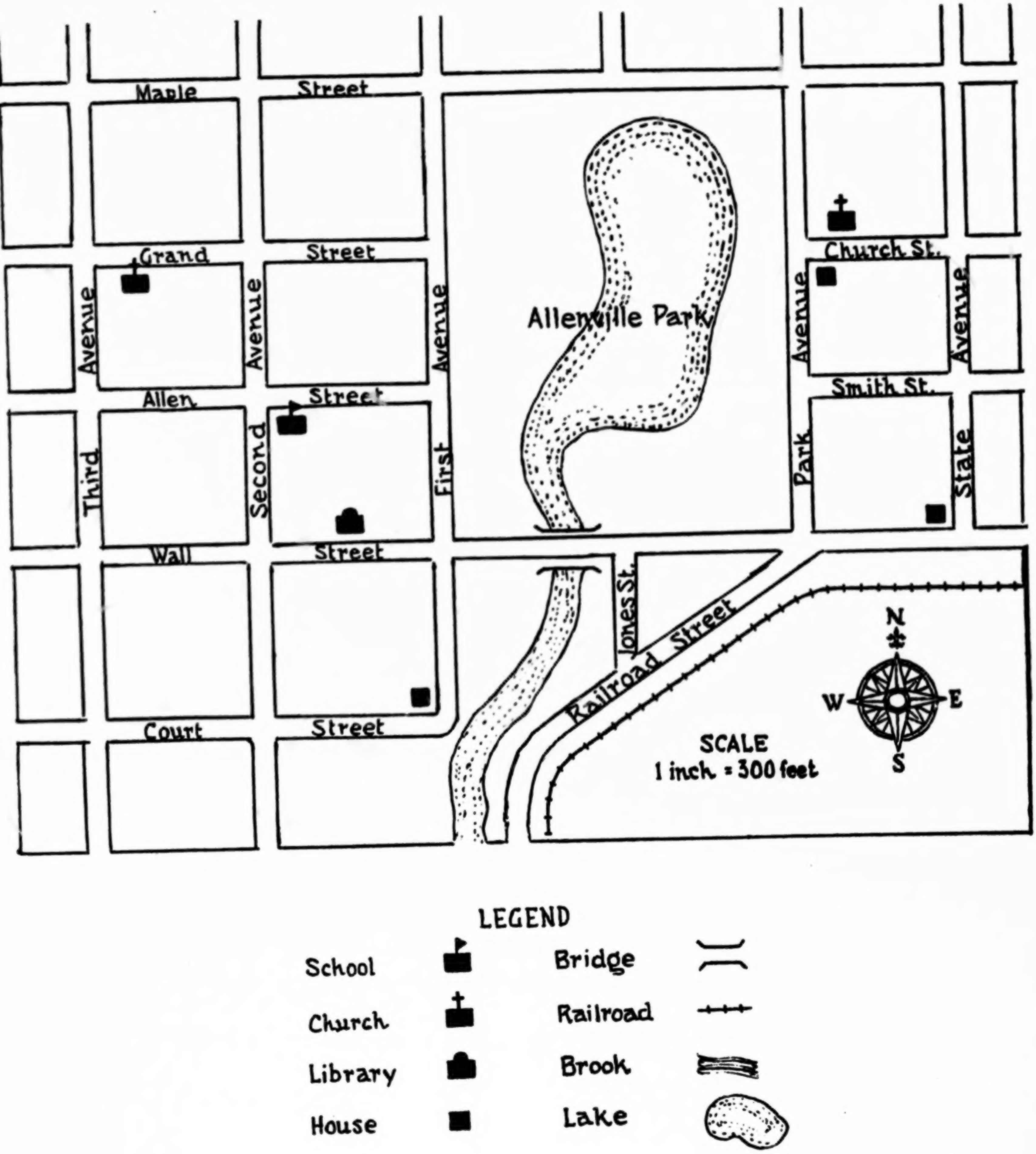
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Grand Street
Church St.
Allen Street
Smith St.
Wall Street
Court Street
Third Avenue
Second Avenue
First Avenue
Park Avenue
State Avenue
Allenville Park
Jones St.
Railroad Street
N
S
E
W
SCALE
1 inch = 300 feet
LEGEND
School
Church
Library
House
Bridge
Railroad
Brook
Lake

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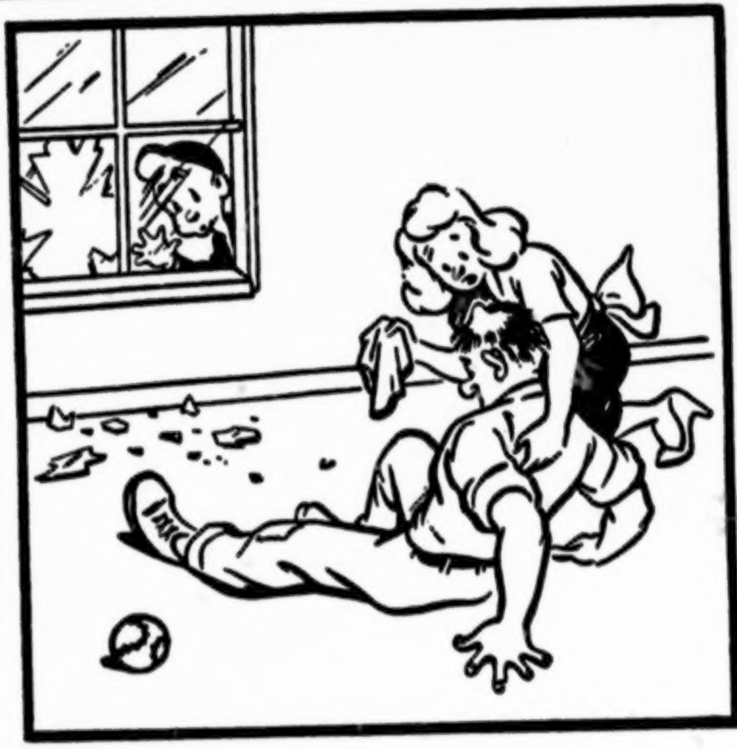
ELEMENTARY-A

DAVIS-EELLS GAMES

BY **Allison Davis**
AND **Kenneth Eells**

ME.. BOY ☐ GIRL ☐



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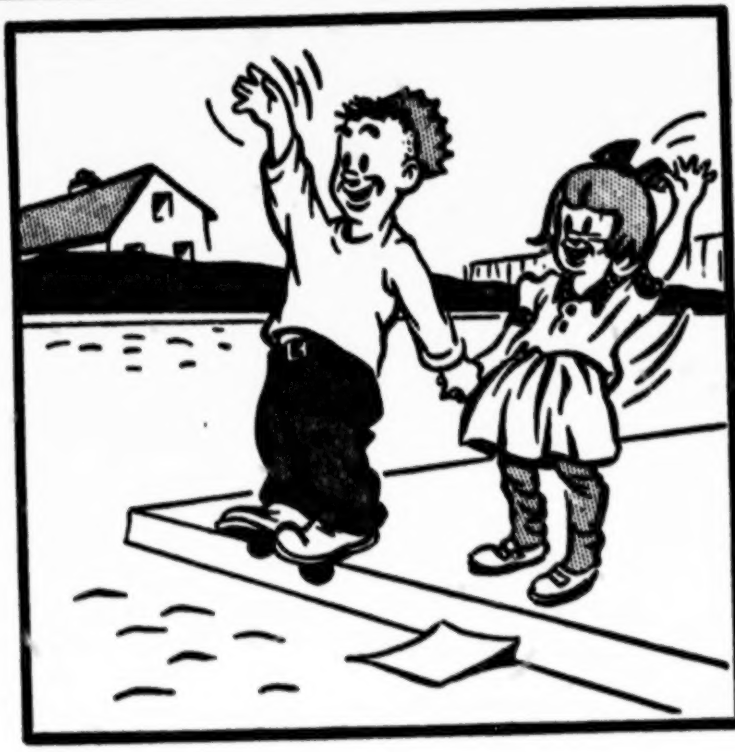

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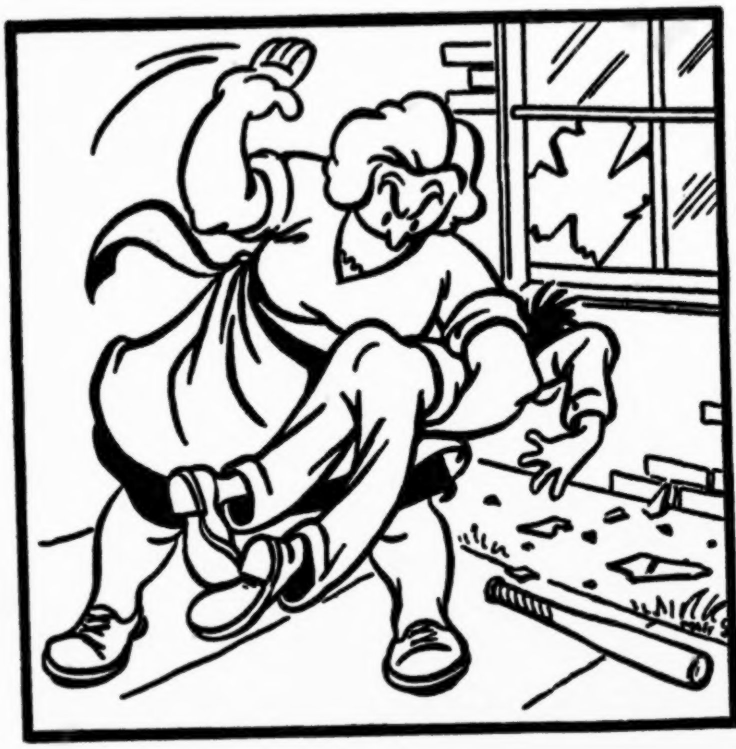

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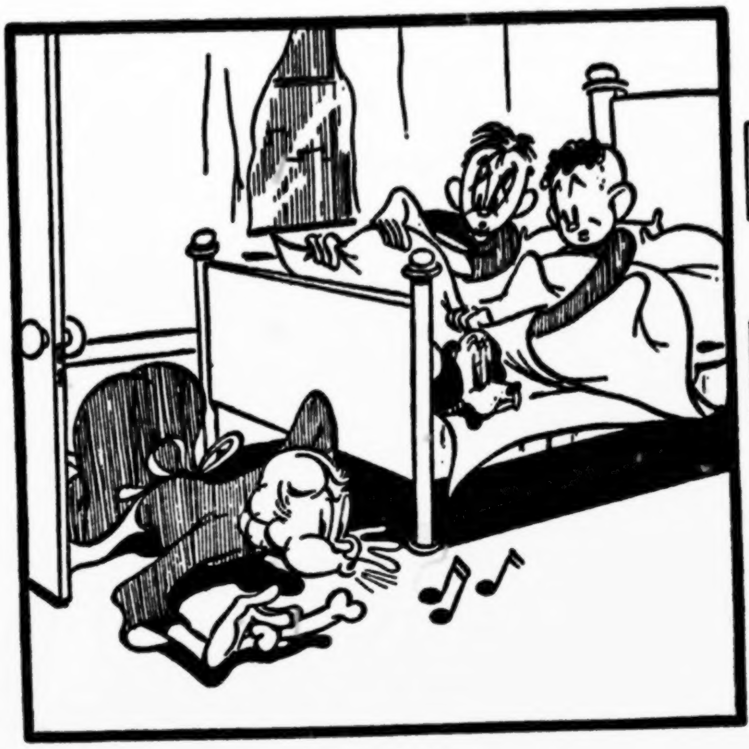

☐ 1
☐ 2
☐ 3

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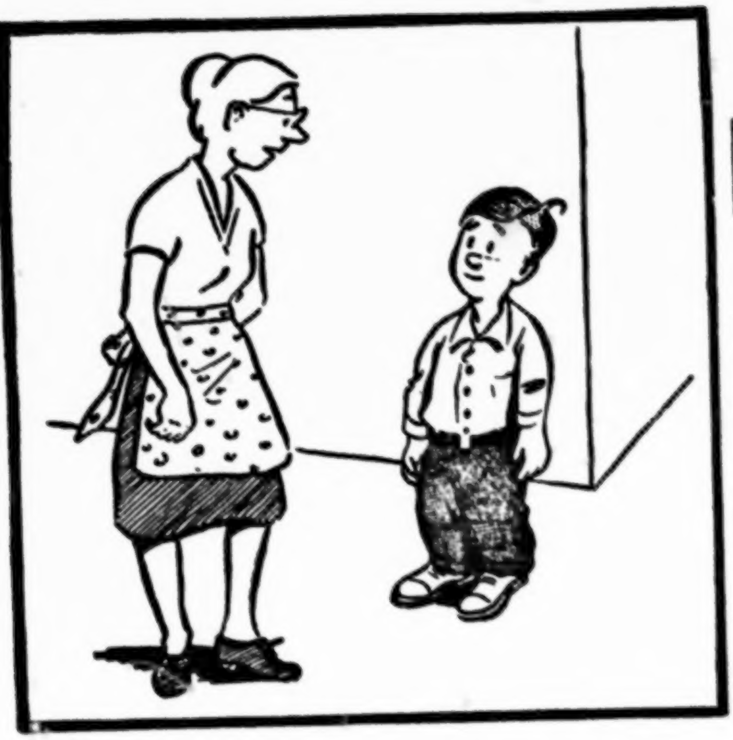

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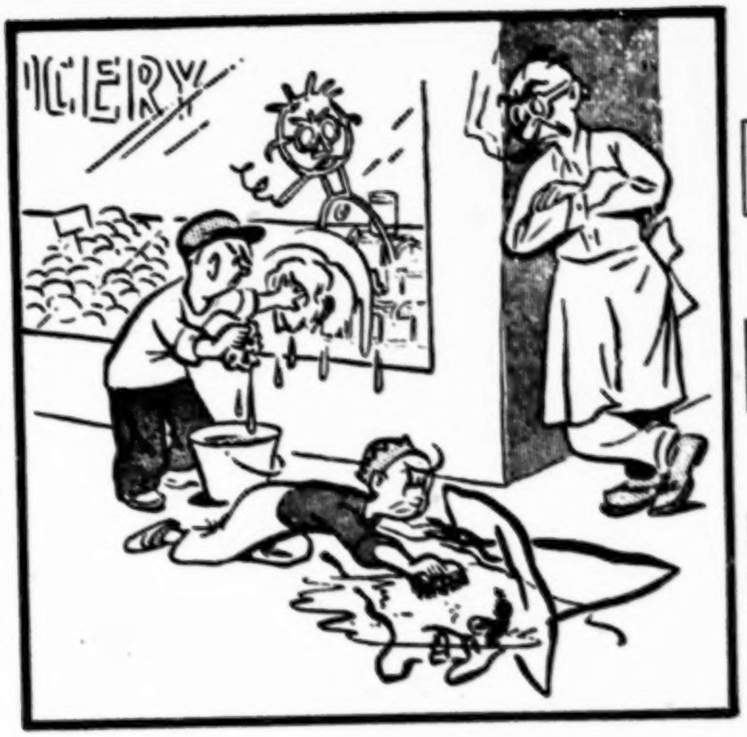

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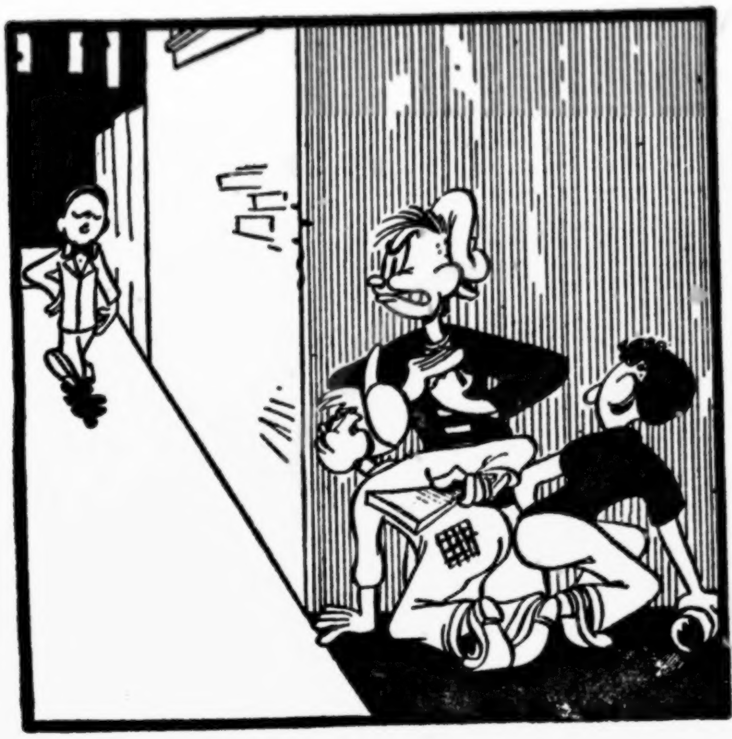

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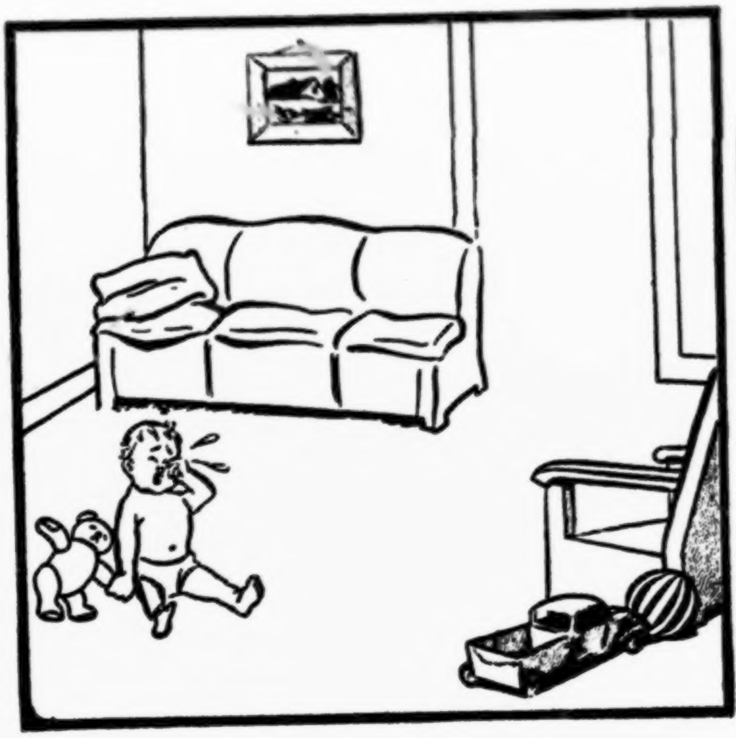

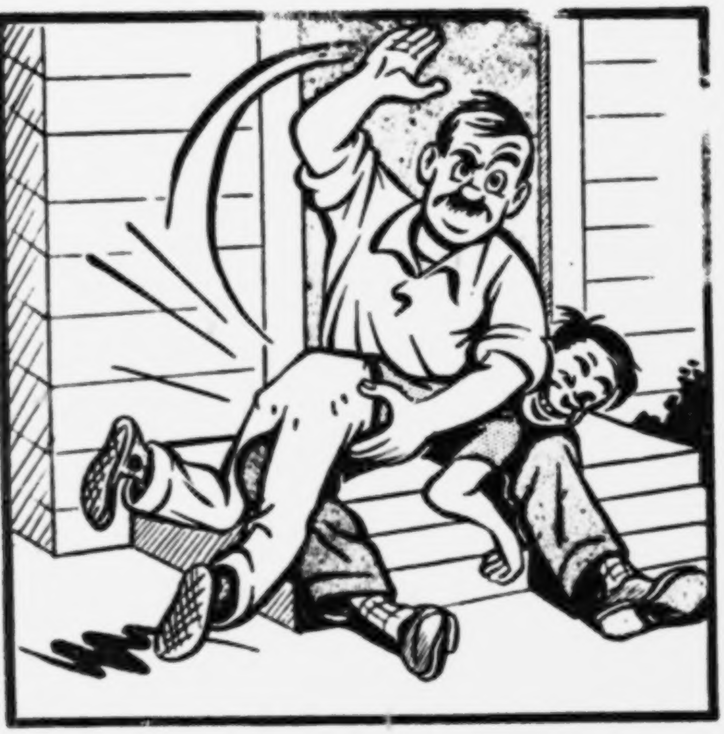

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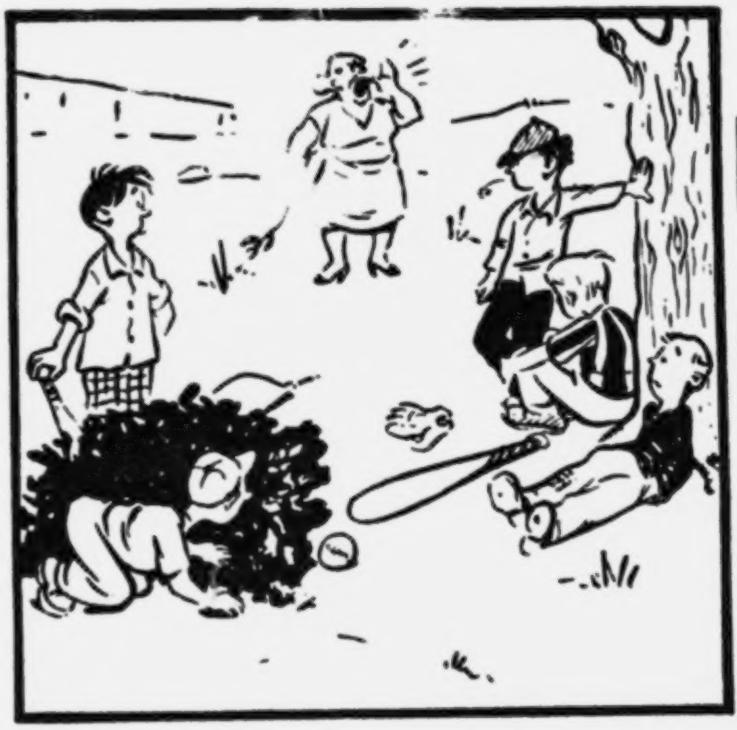

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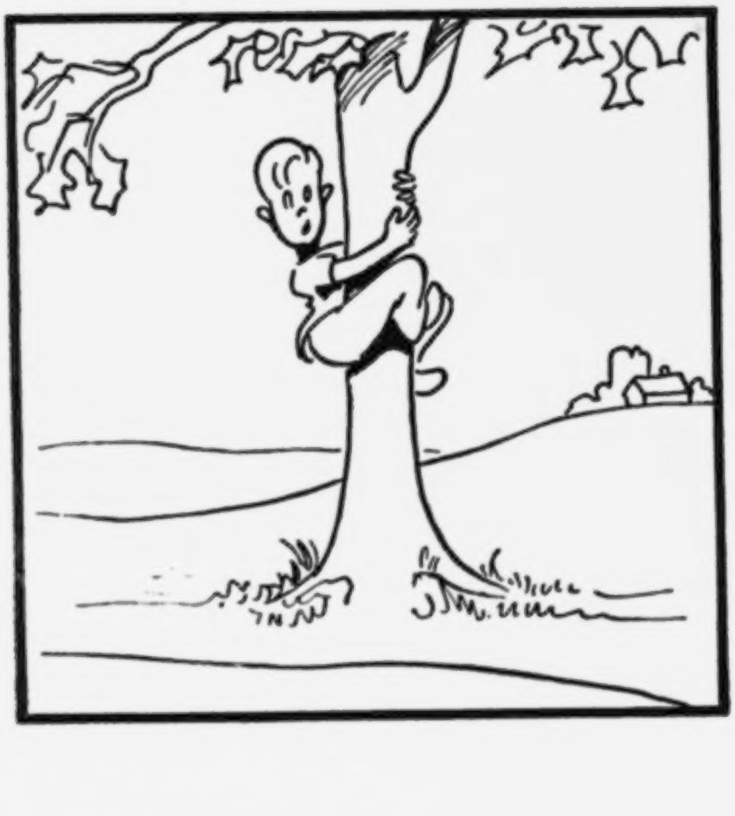

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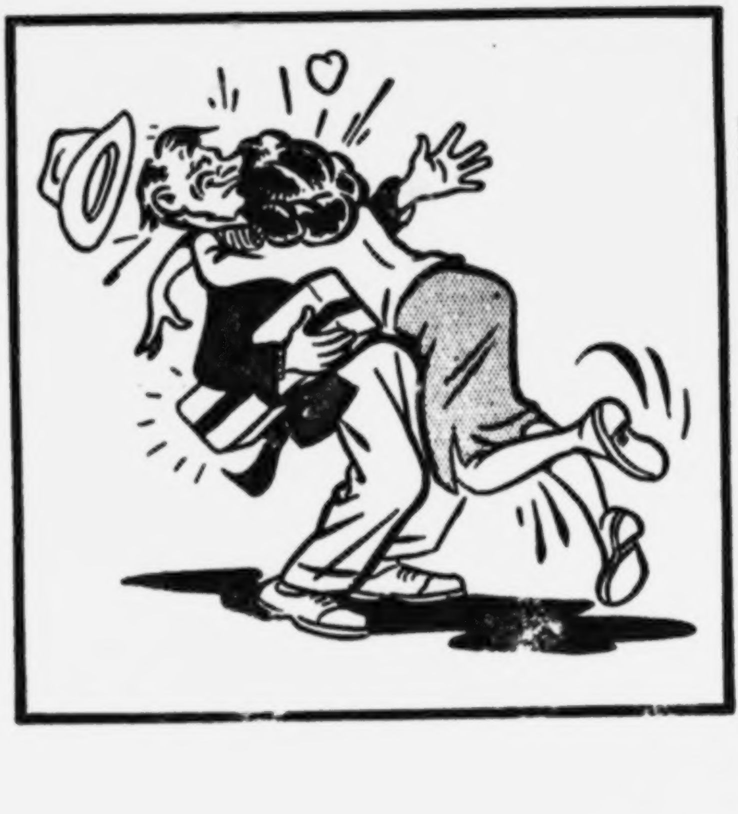

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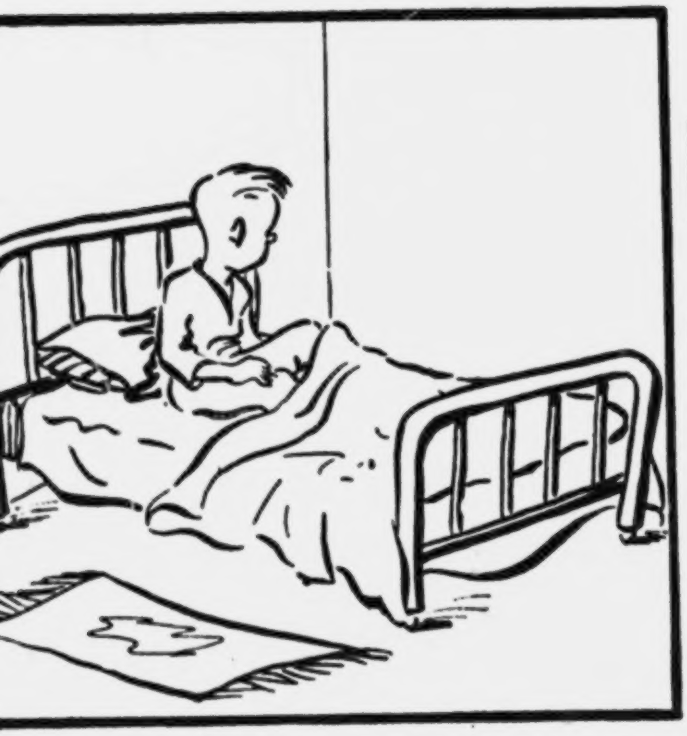

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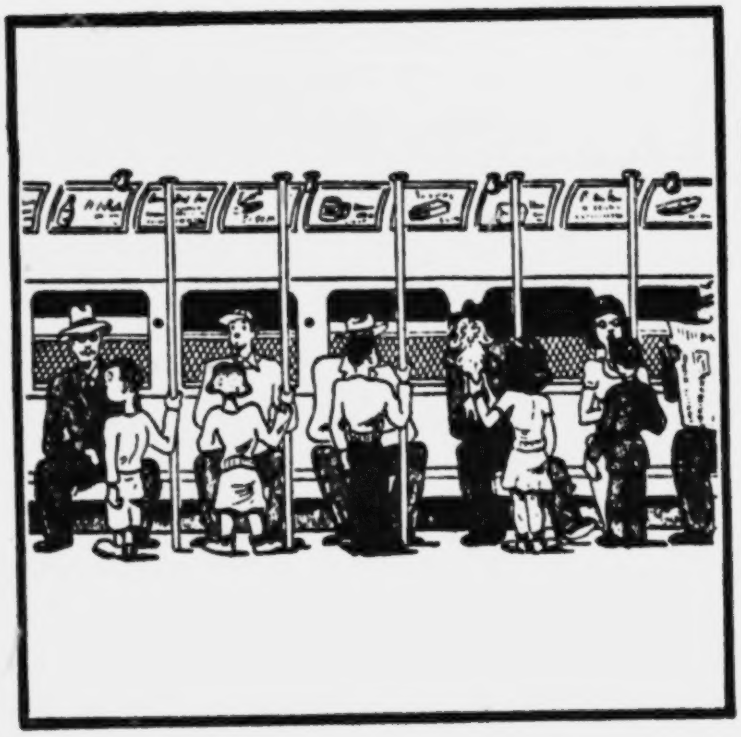

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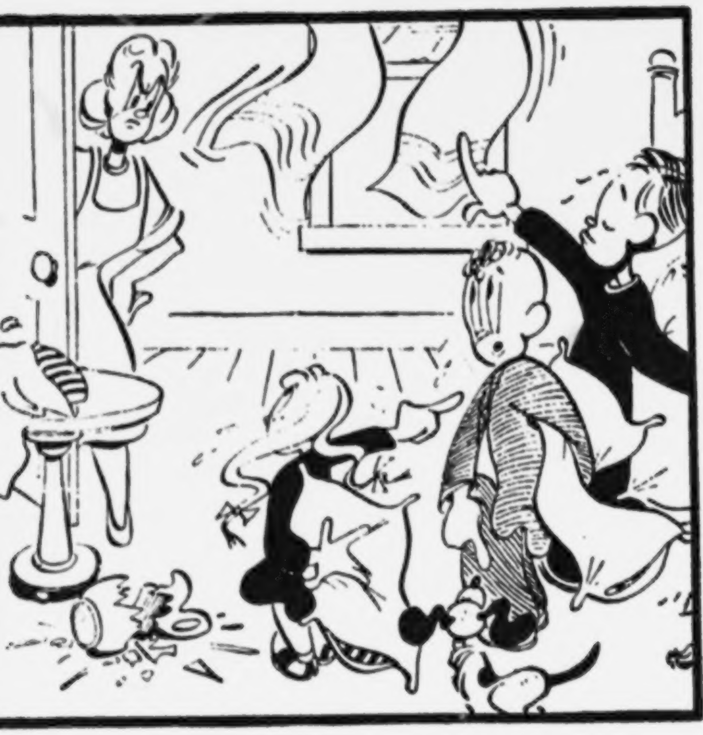

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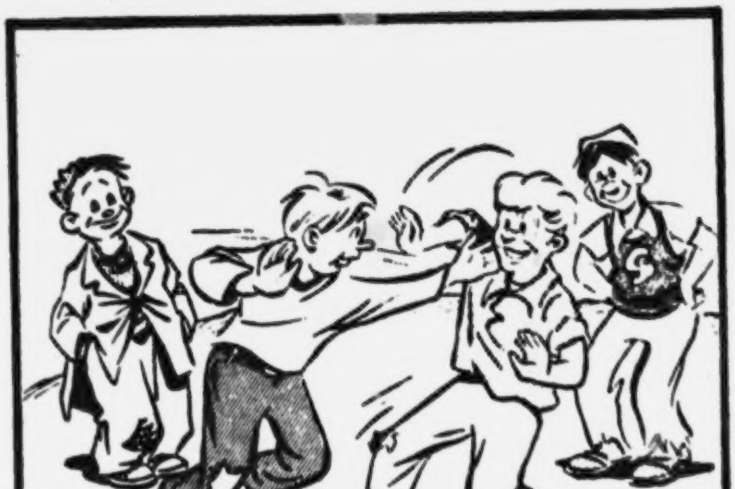

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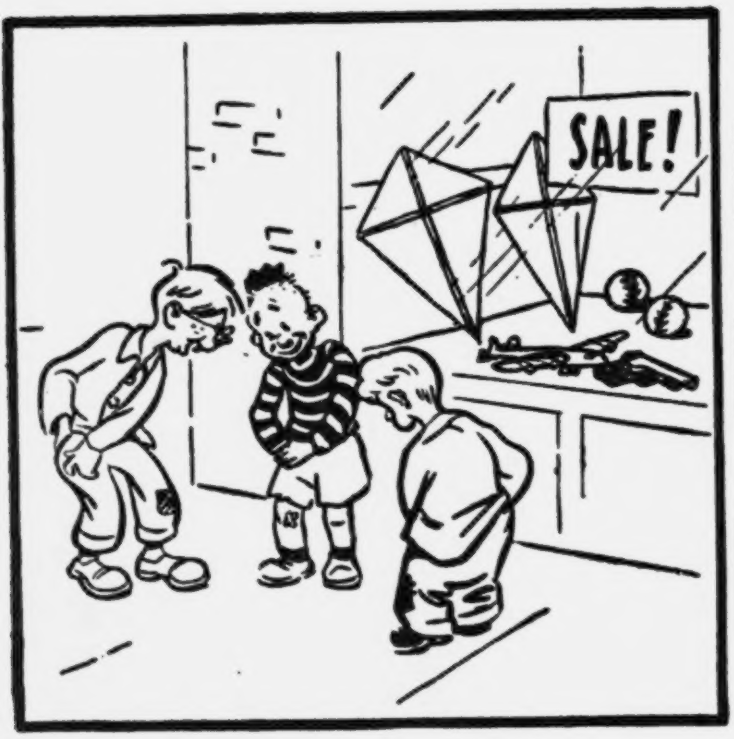

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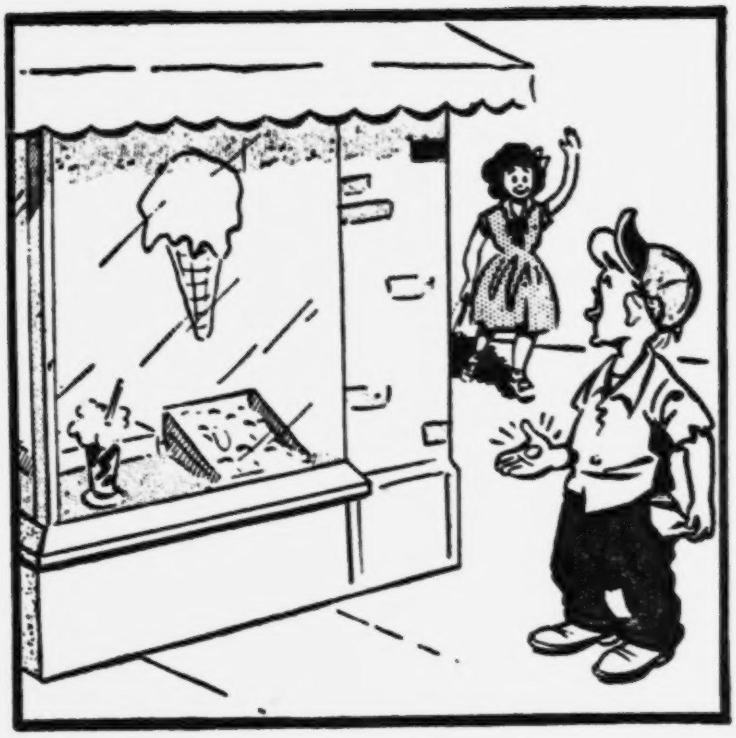

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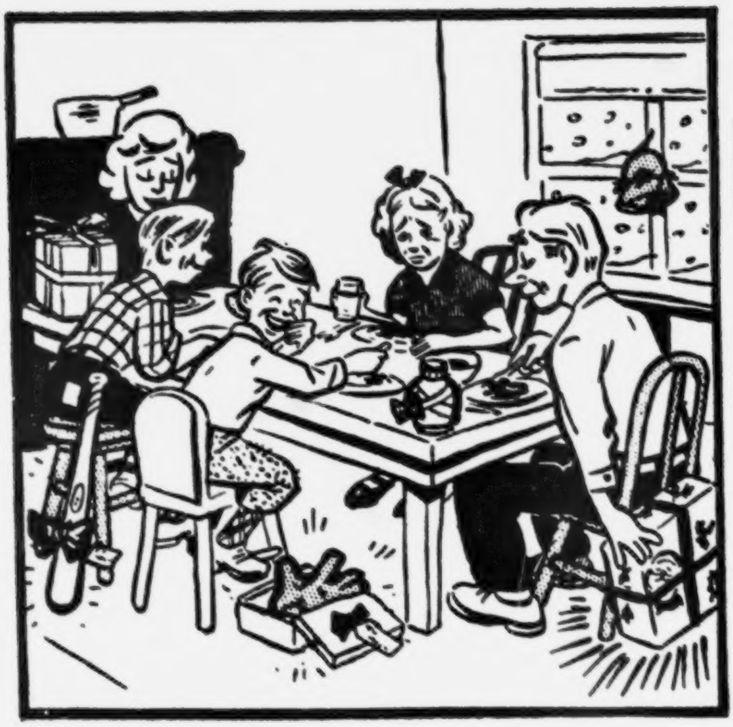

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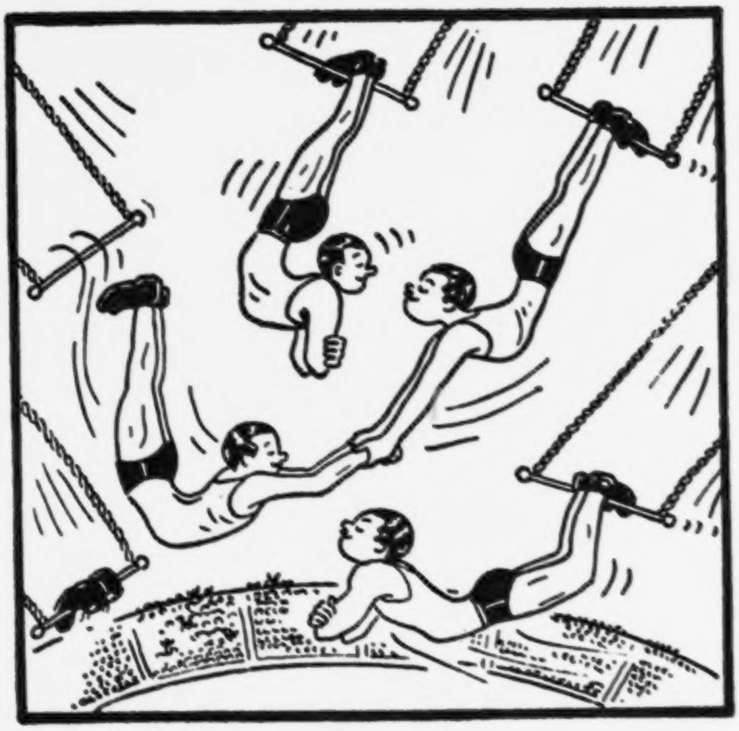

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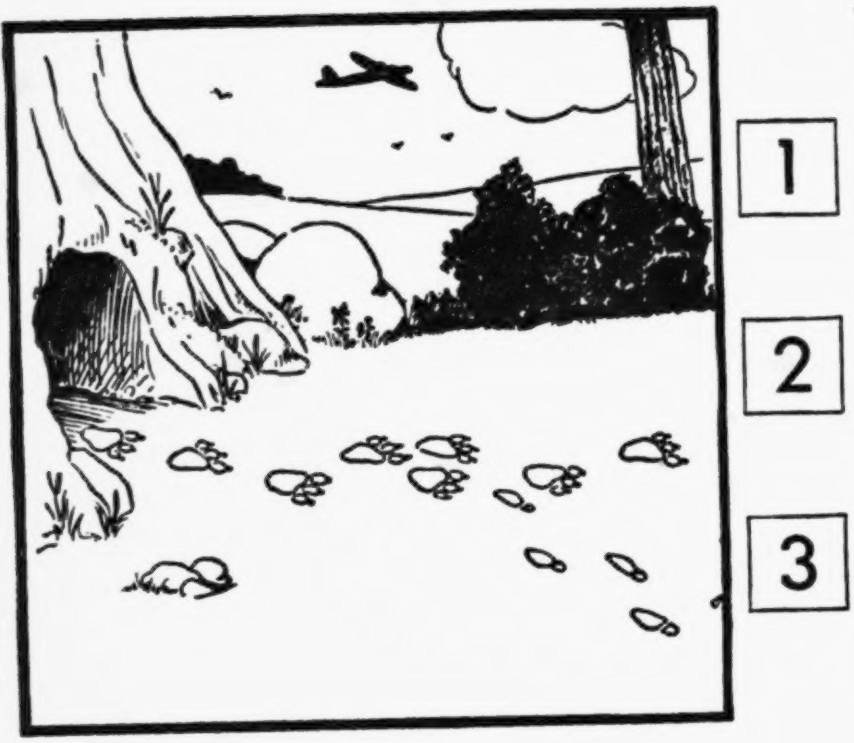

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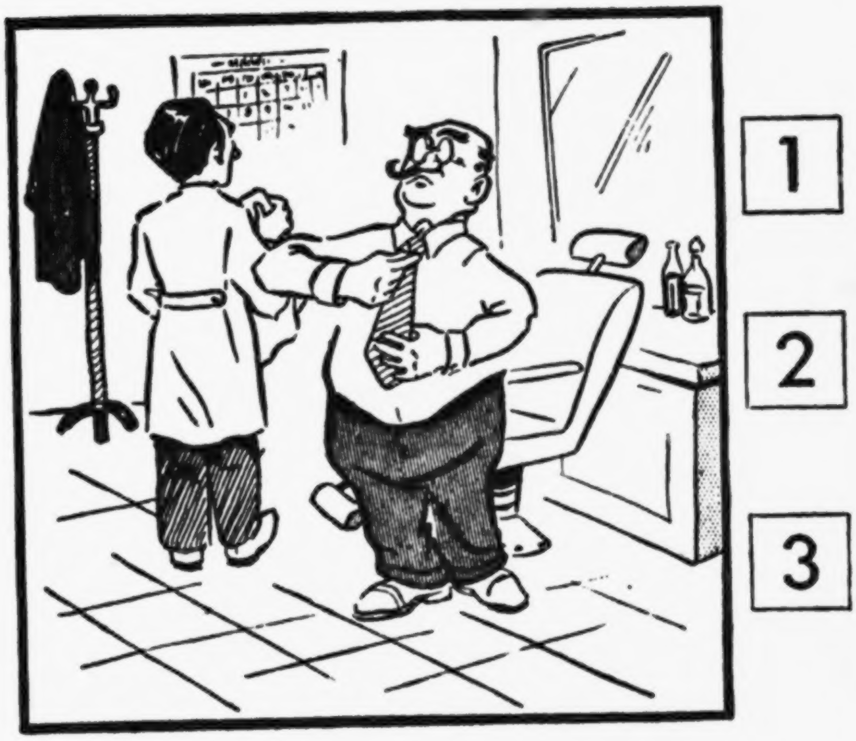

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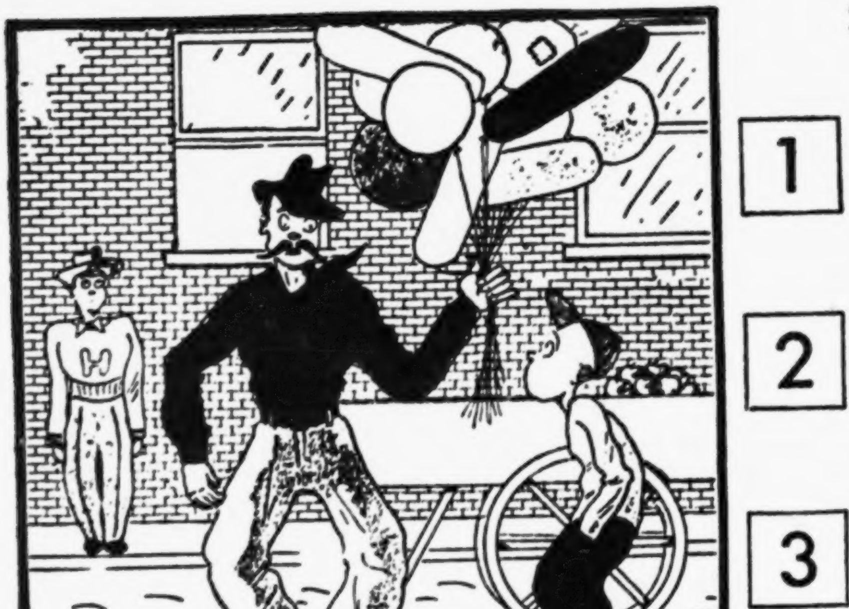

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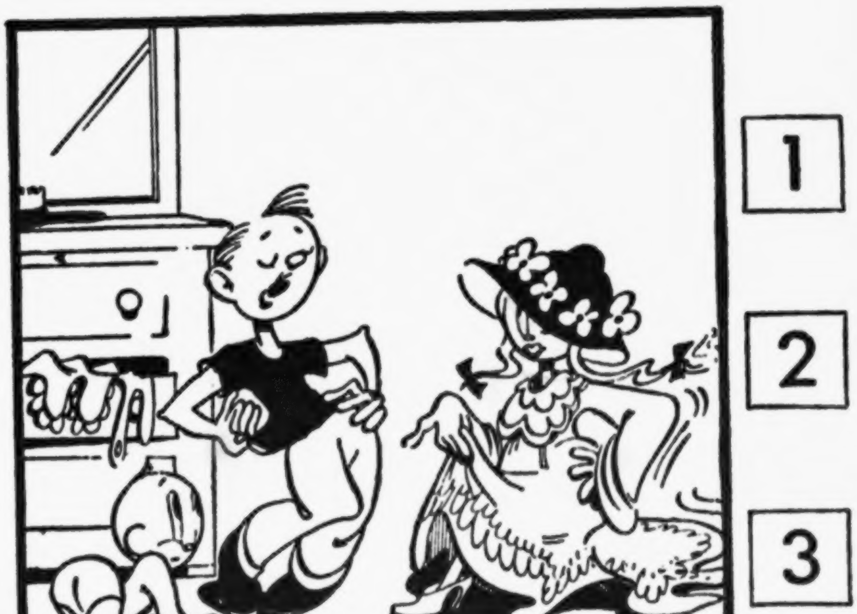

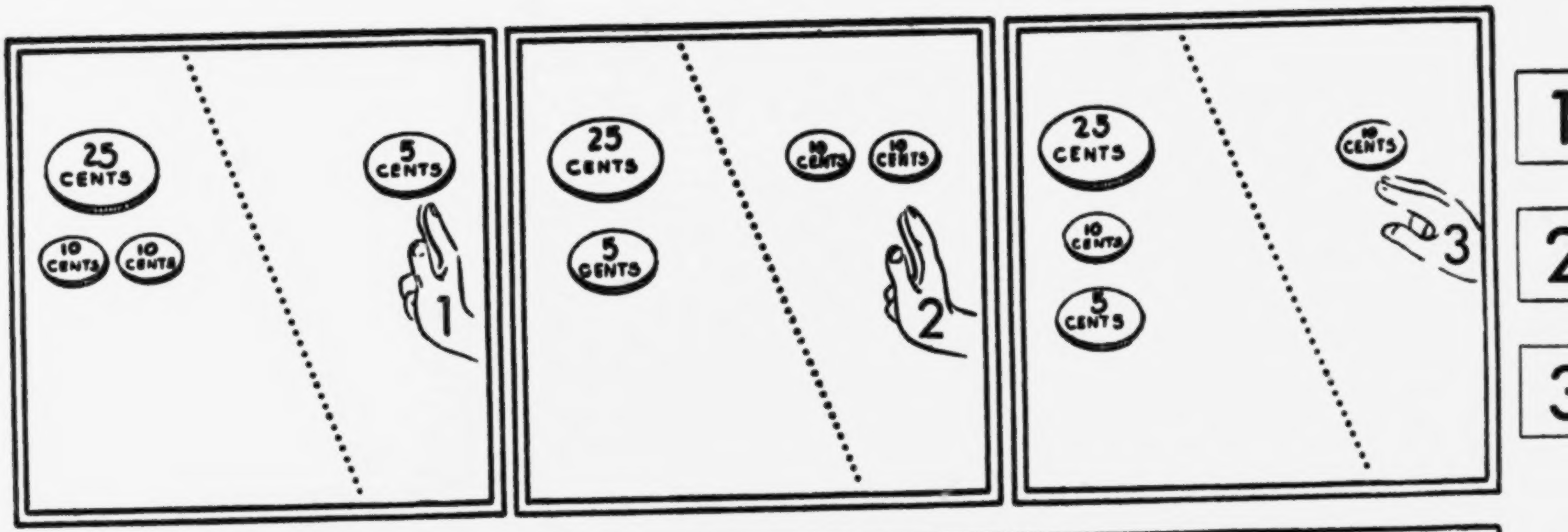
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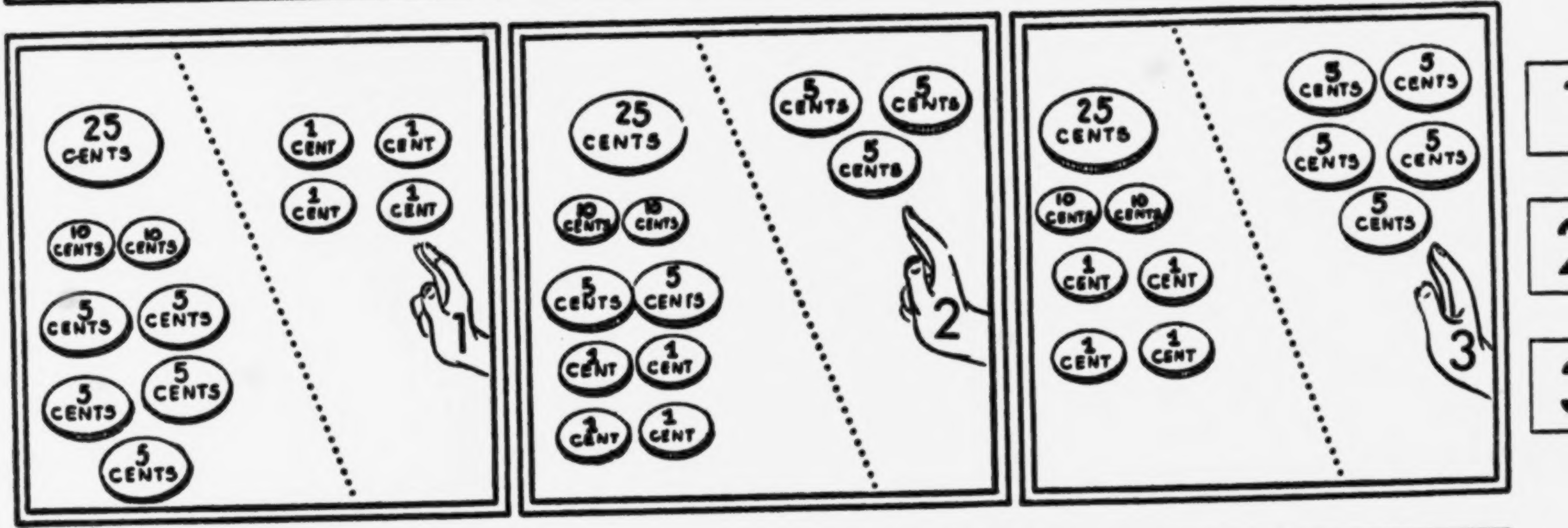
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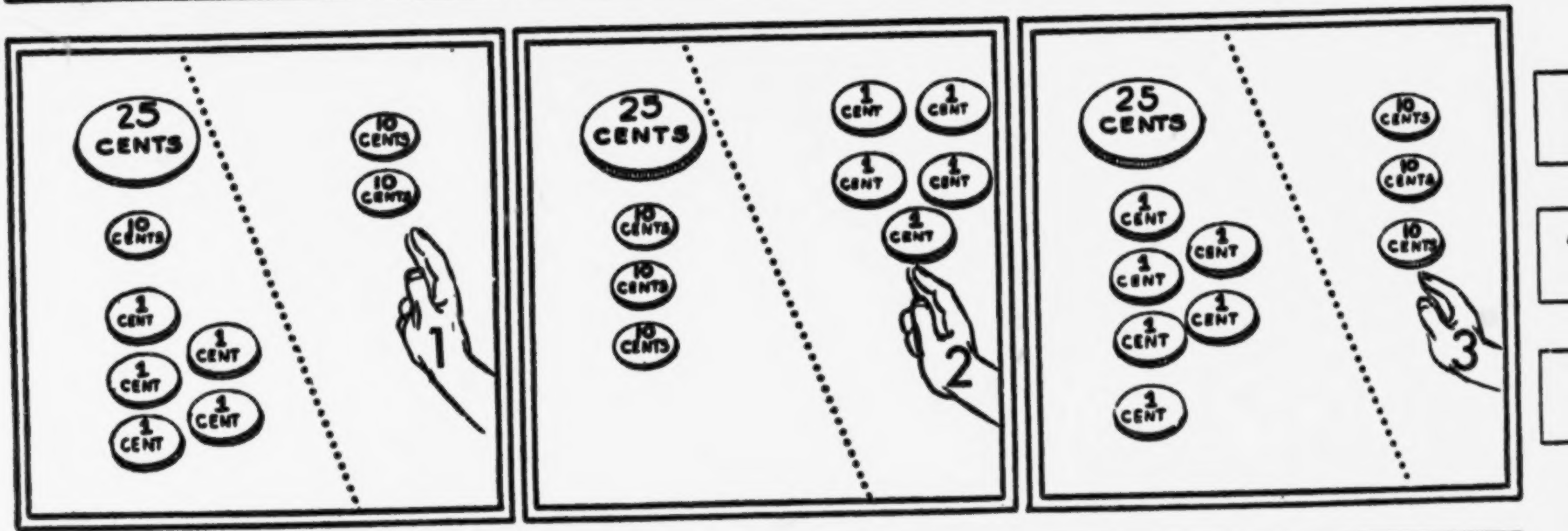
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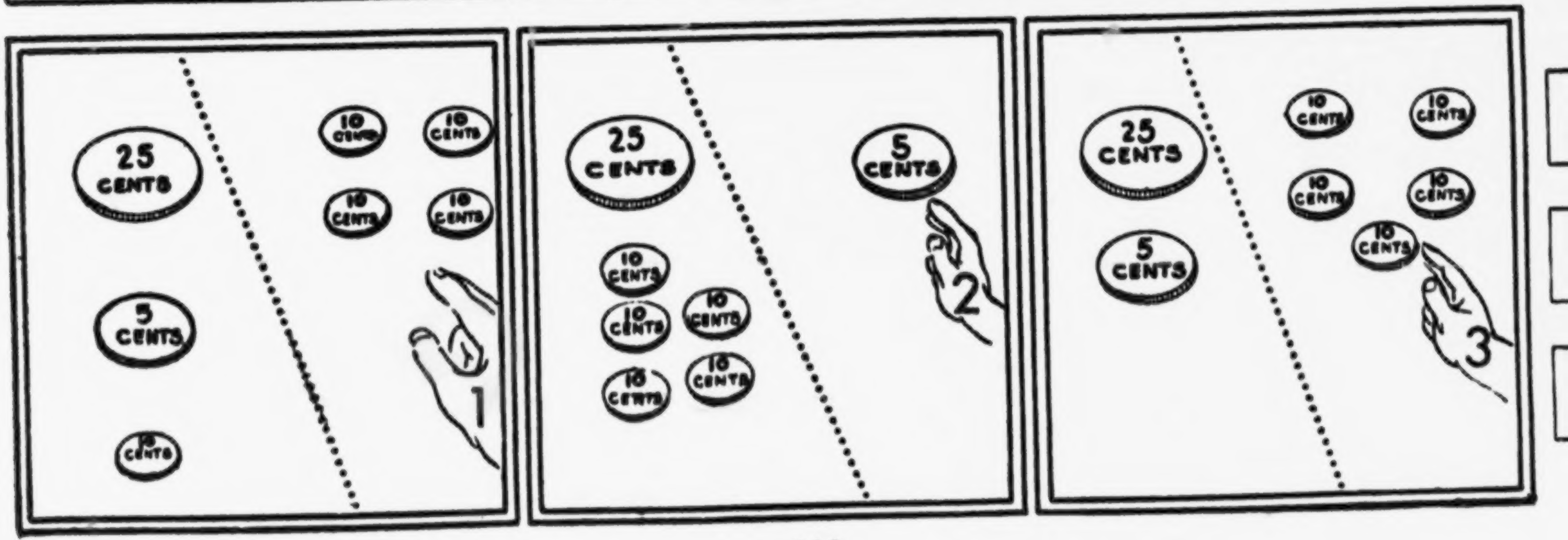
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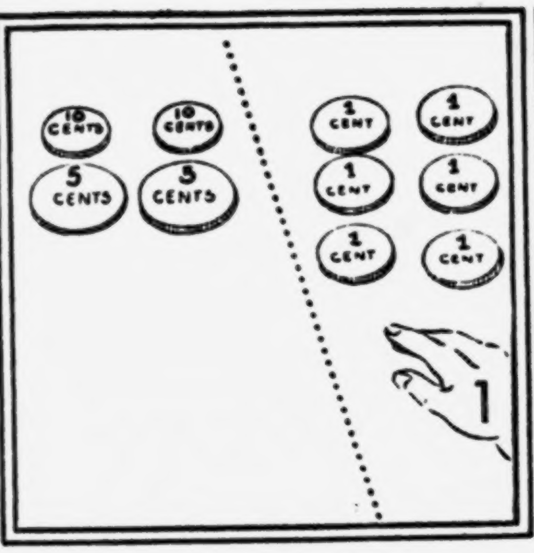
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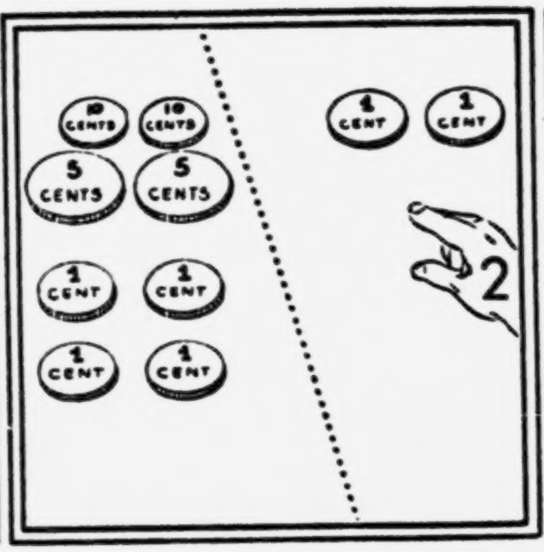
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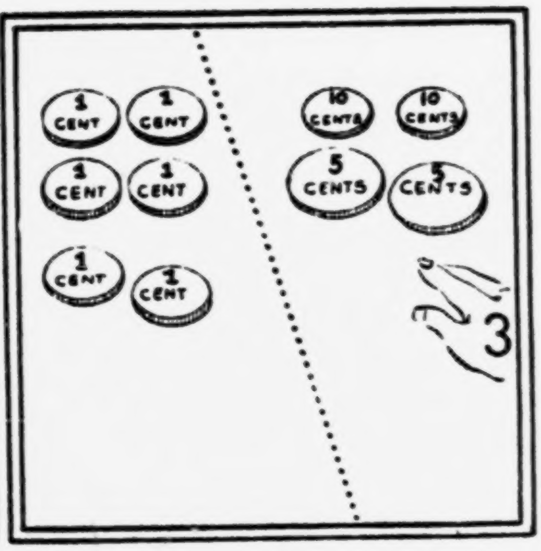
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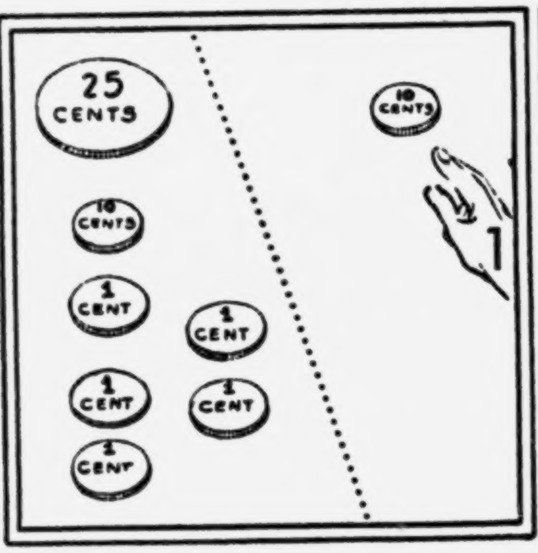
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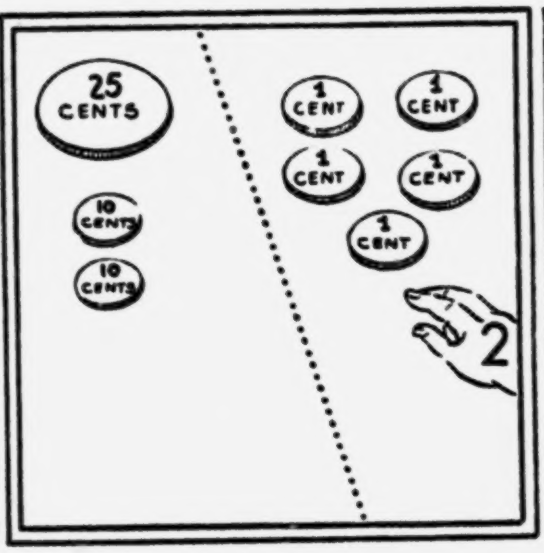
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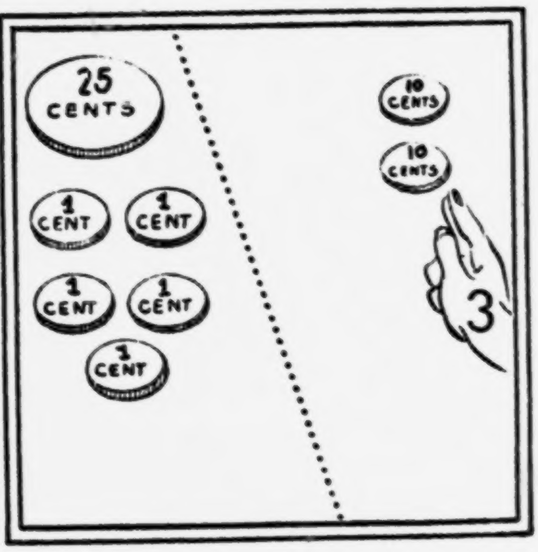
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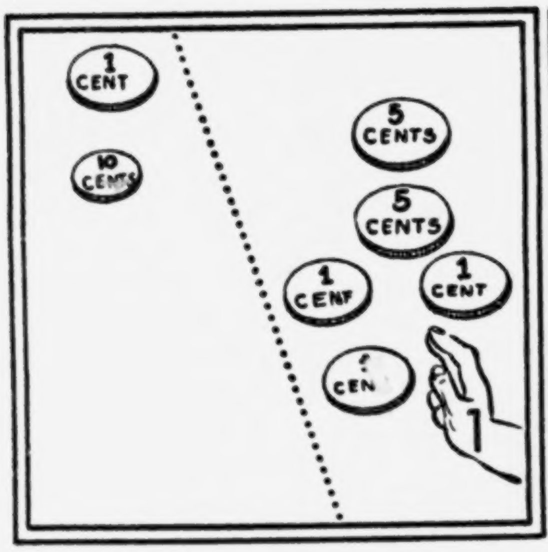
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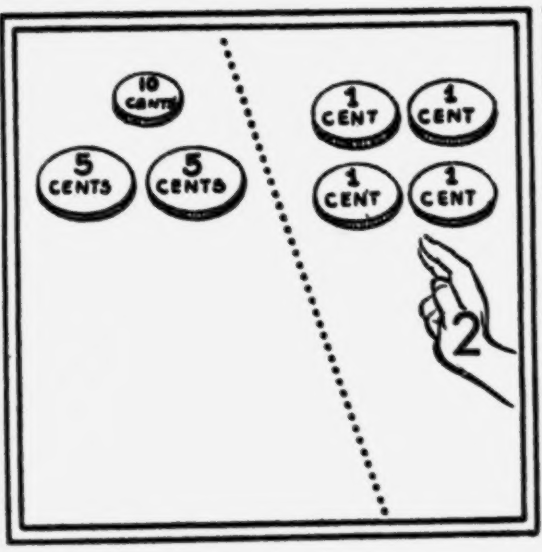
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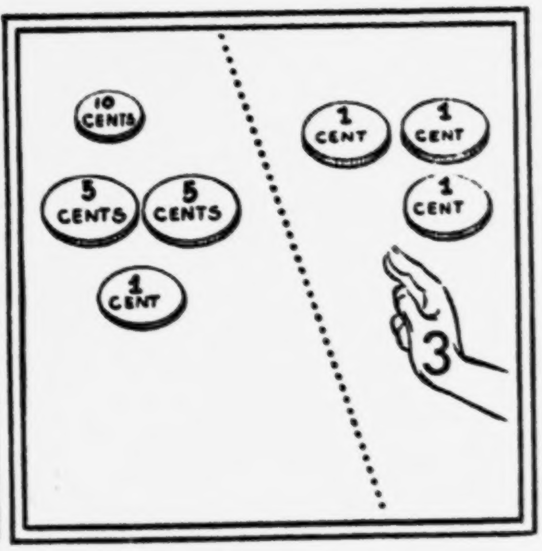
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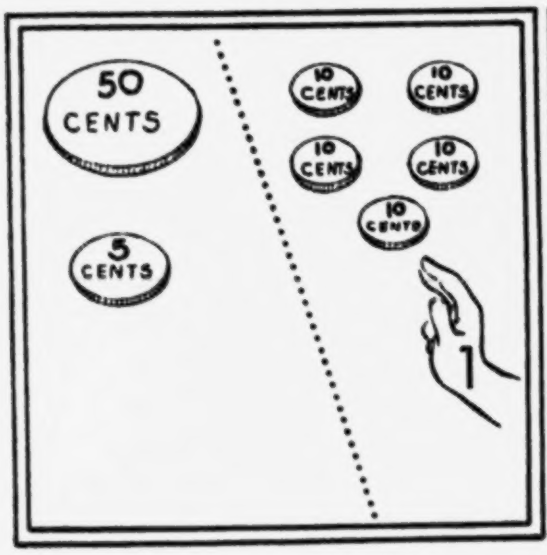
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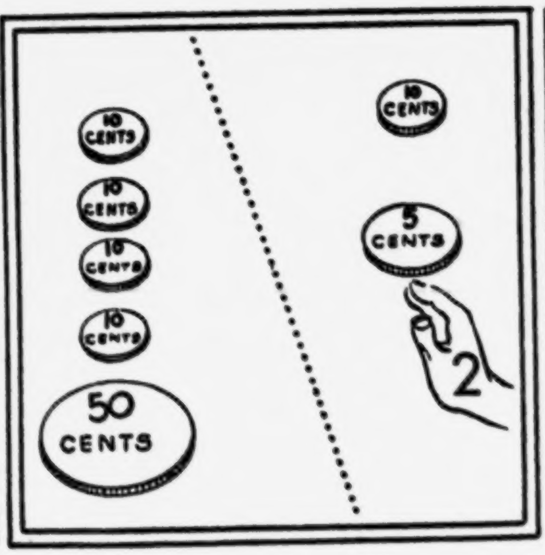
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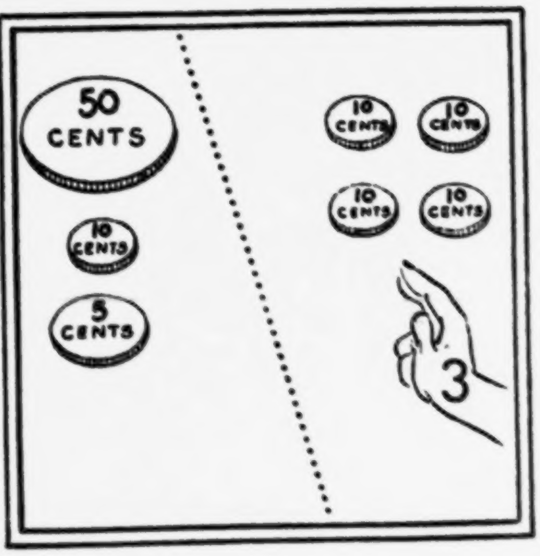
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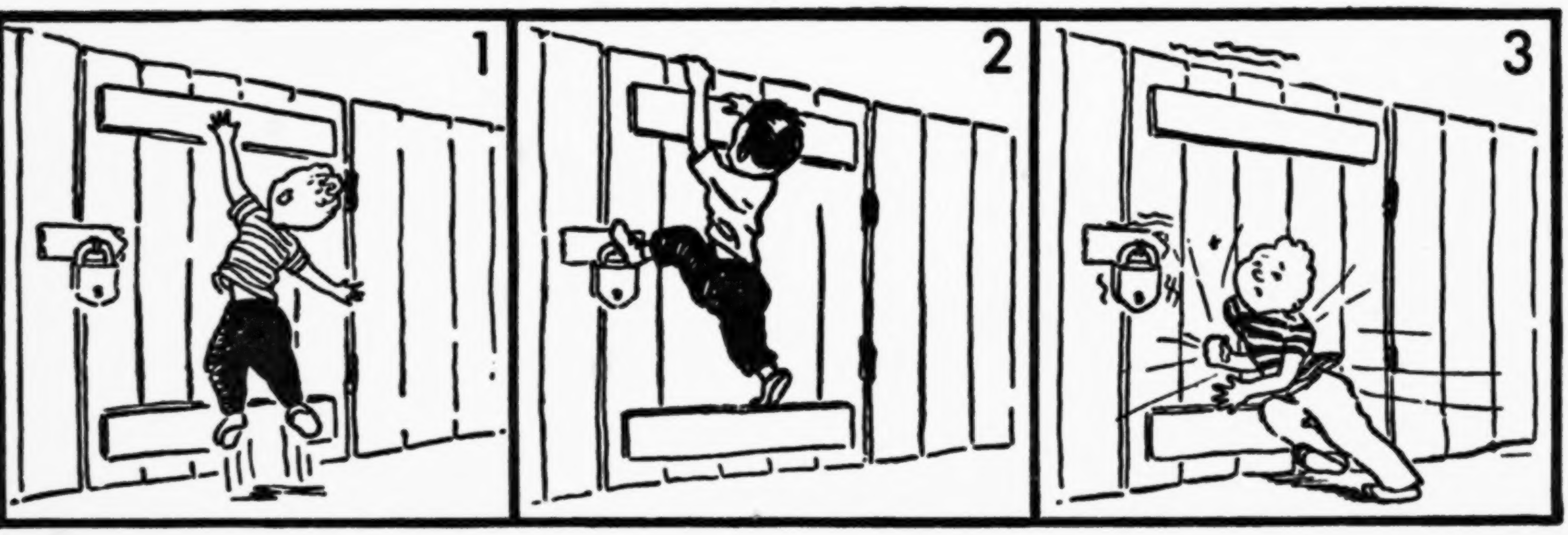

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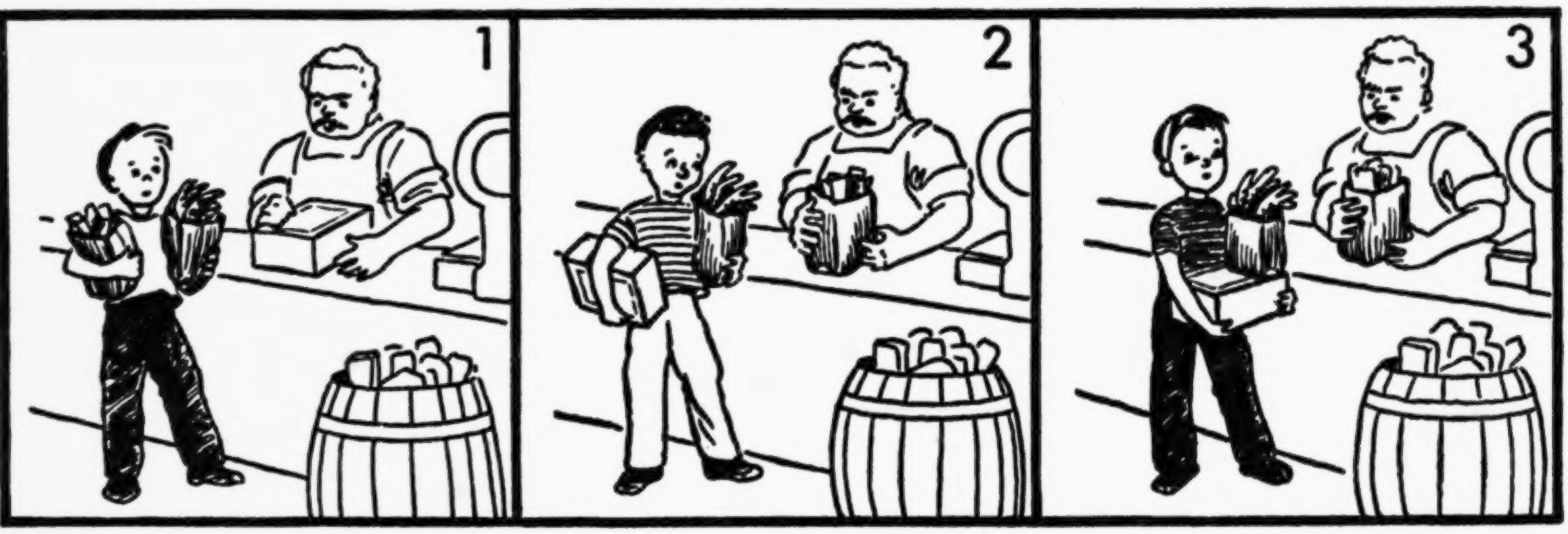

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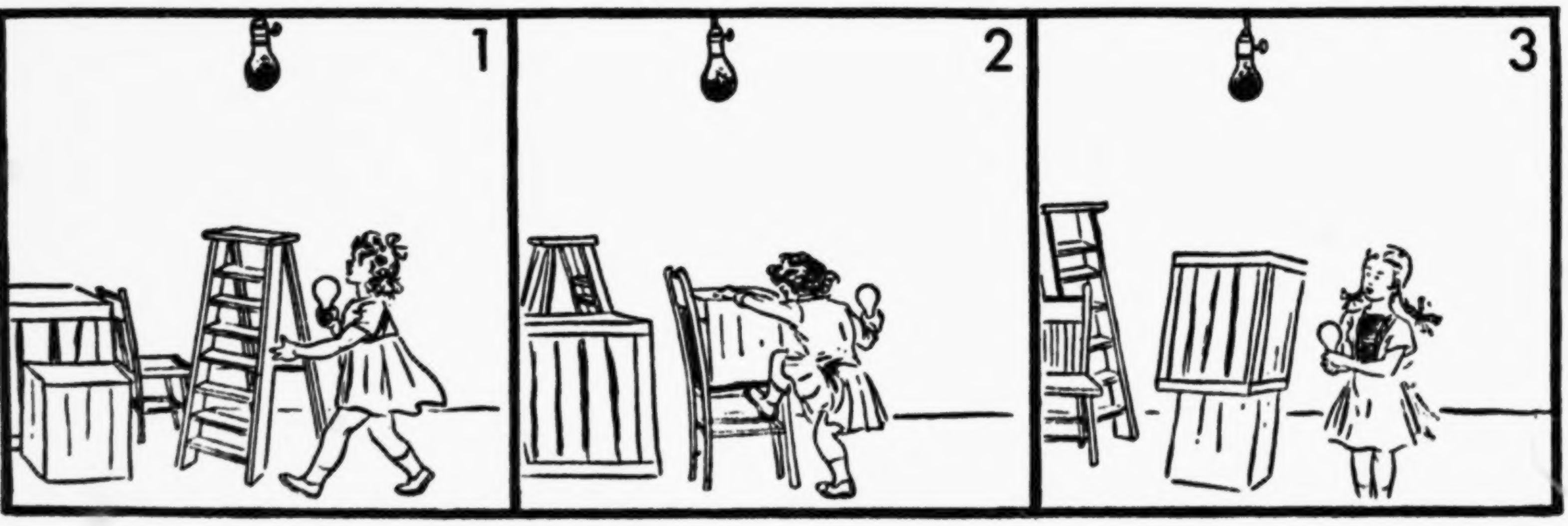

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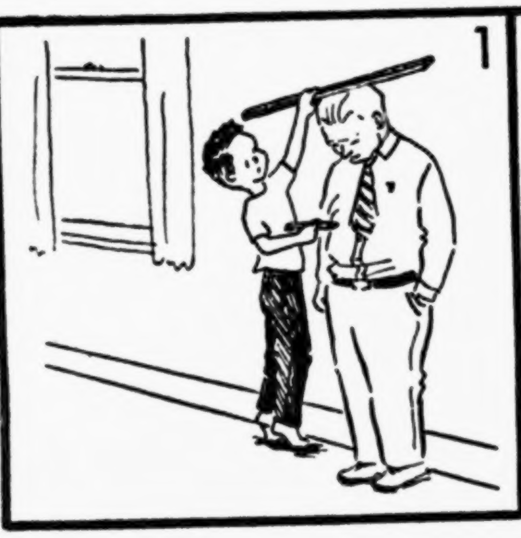

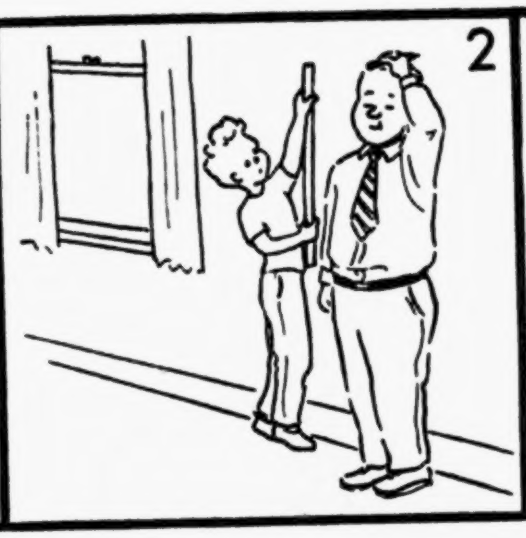

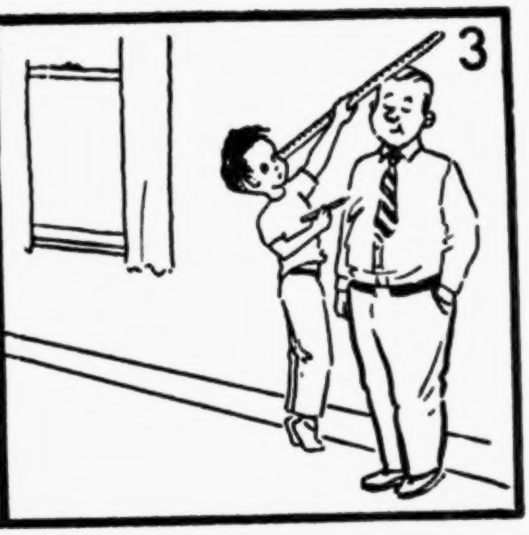

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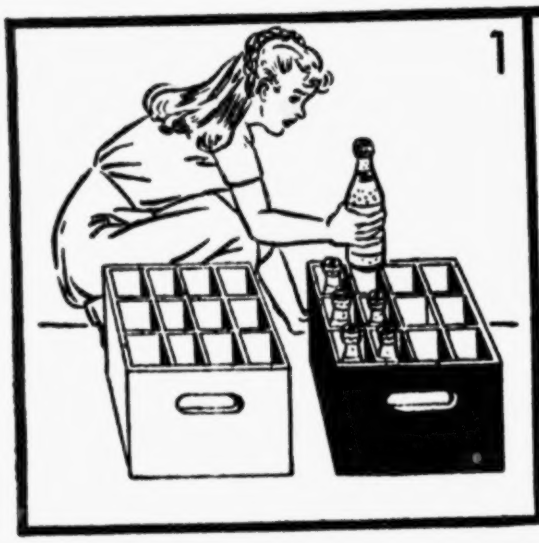

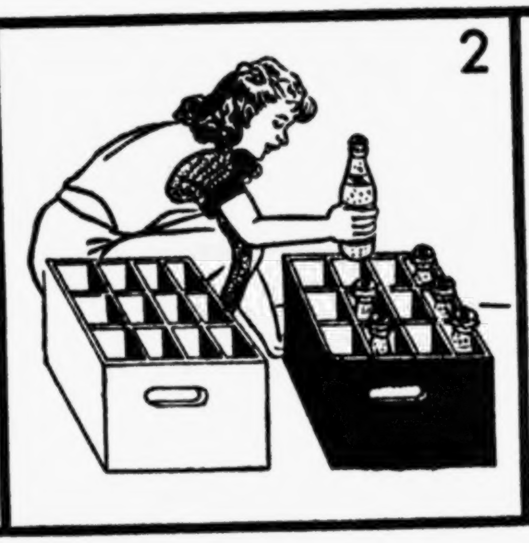

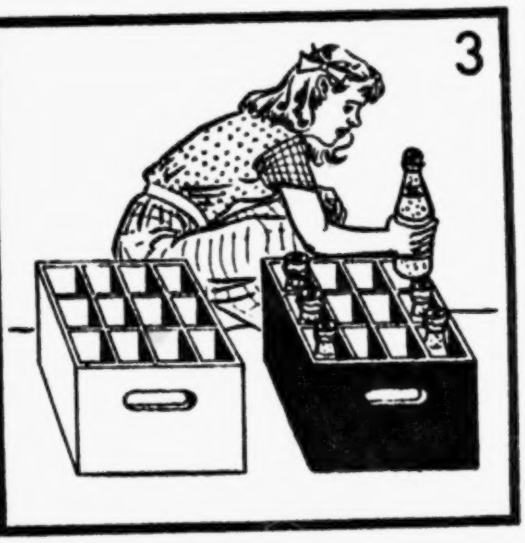

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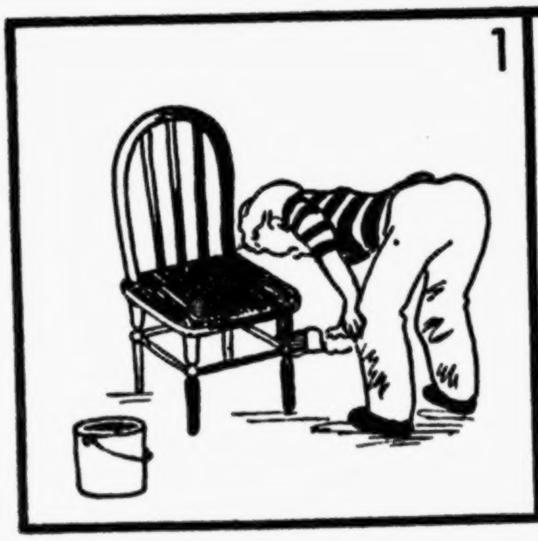

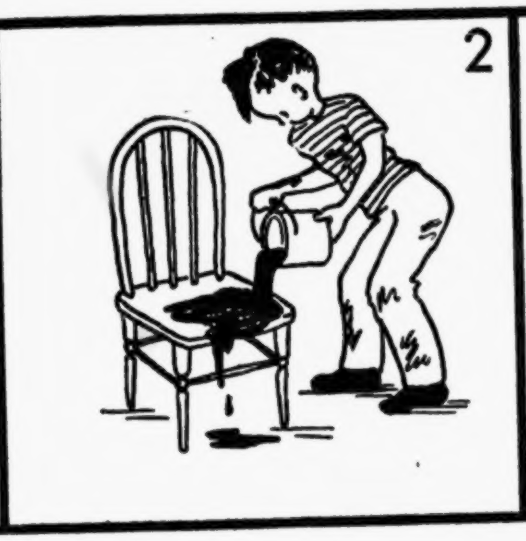

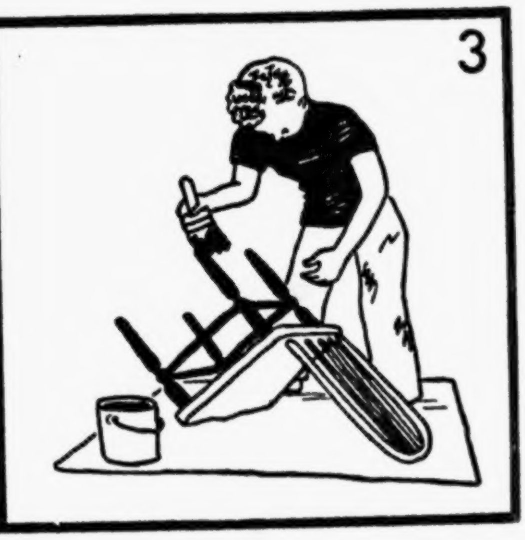

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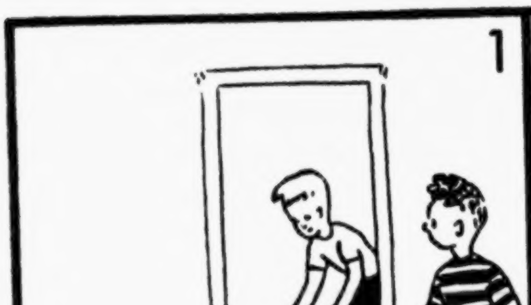

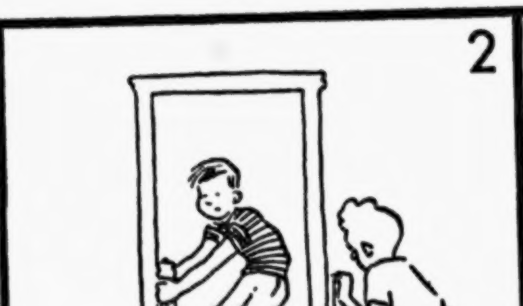

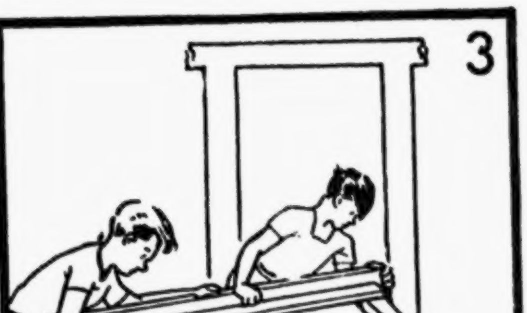

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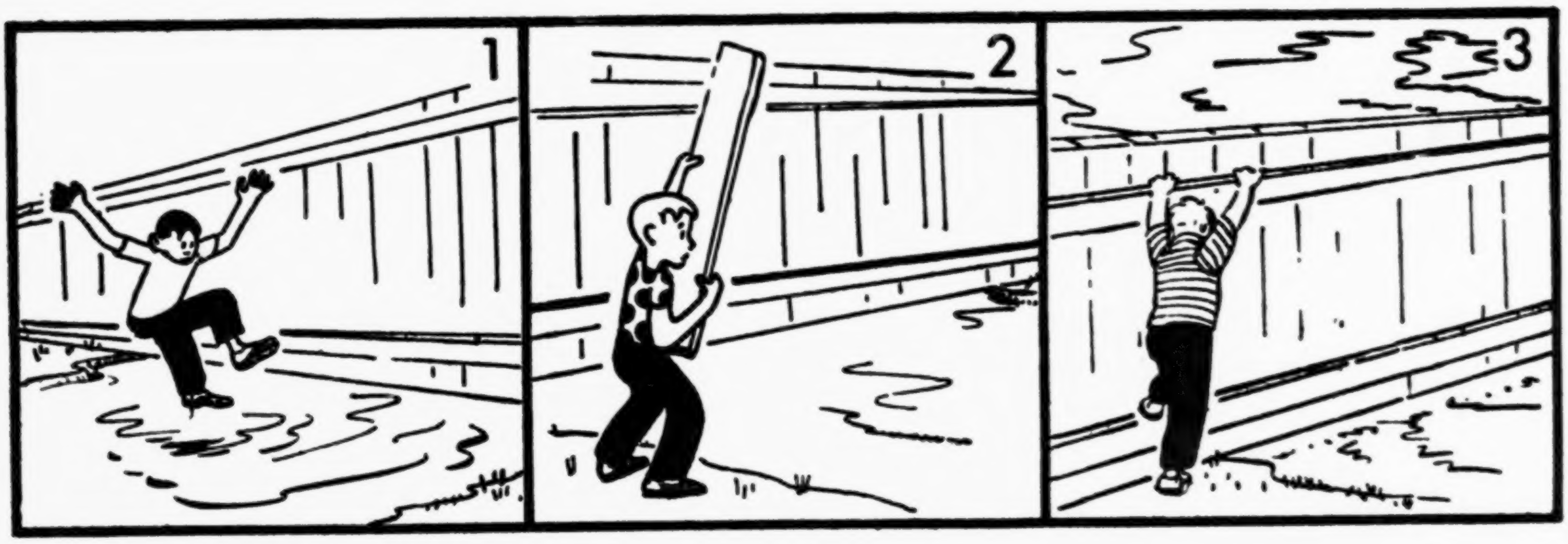

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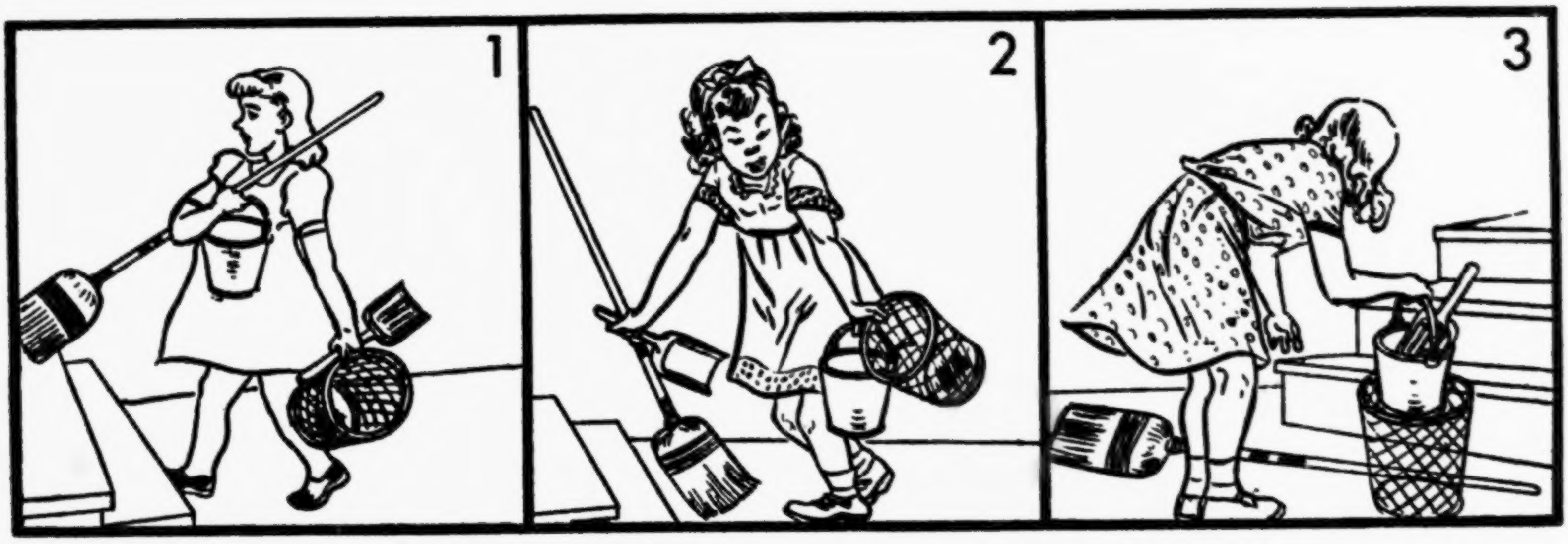

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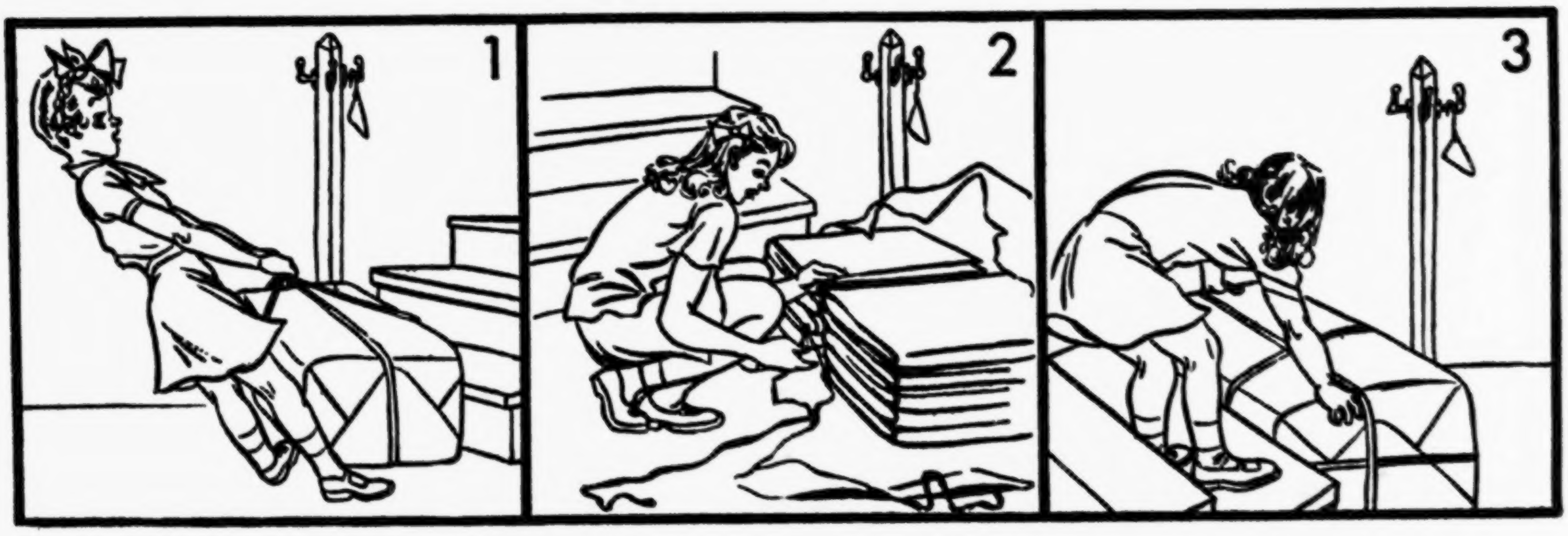

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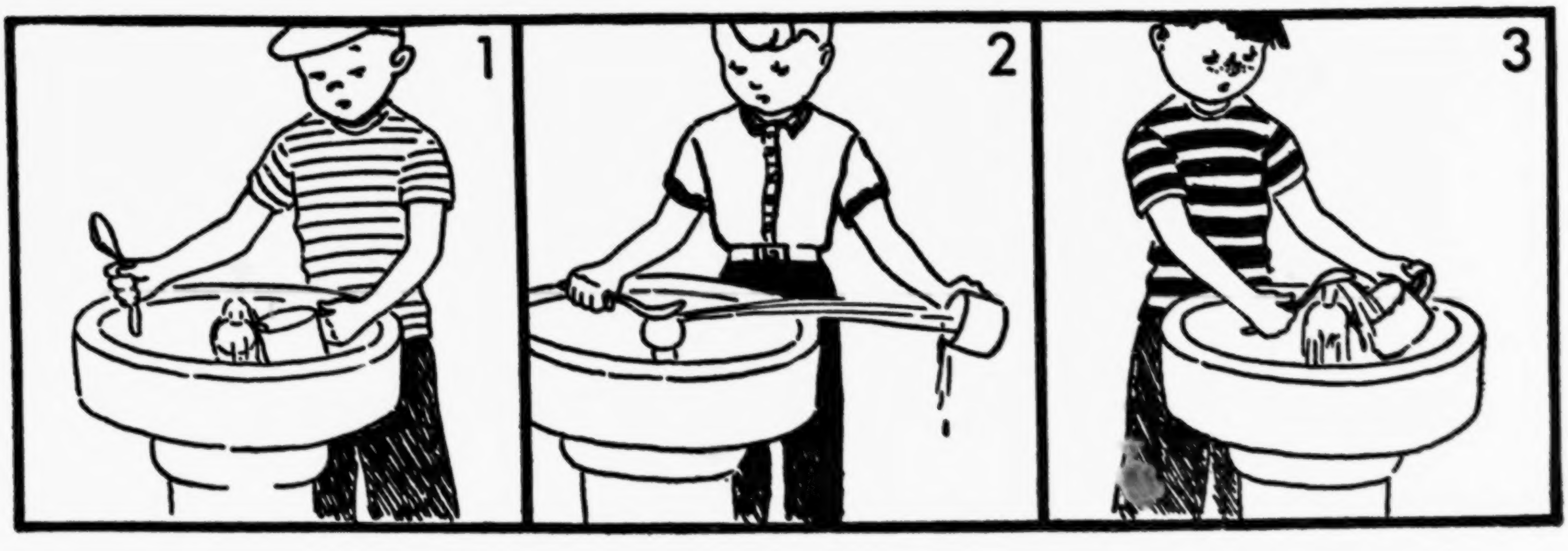

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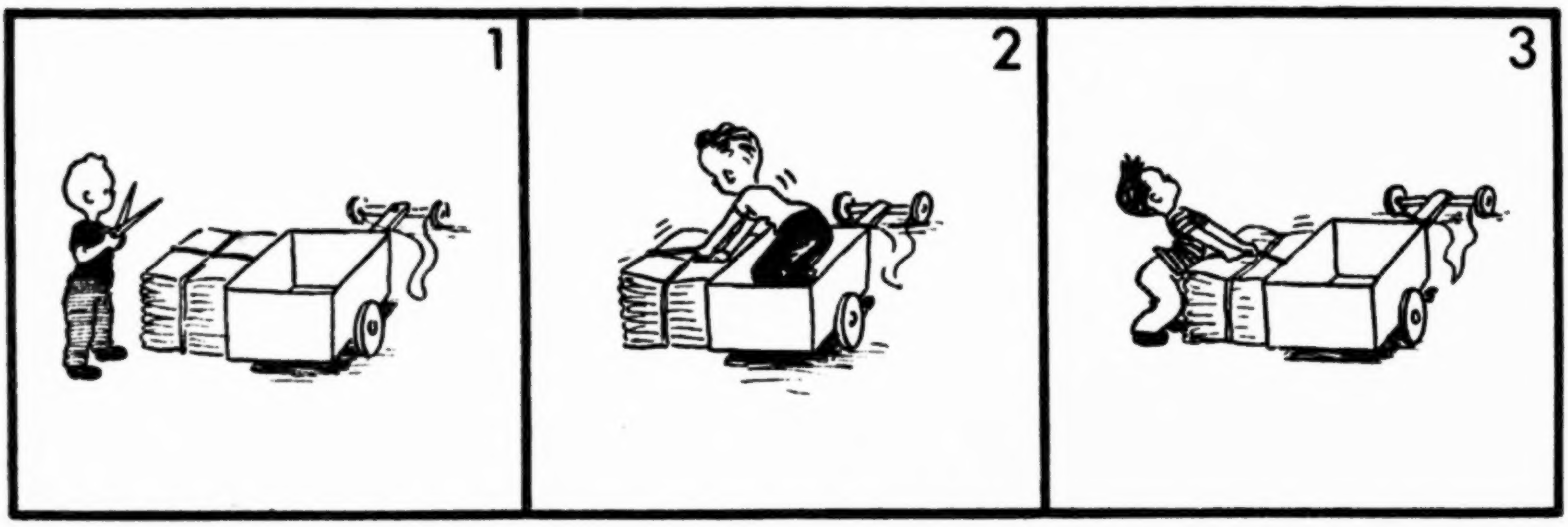

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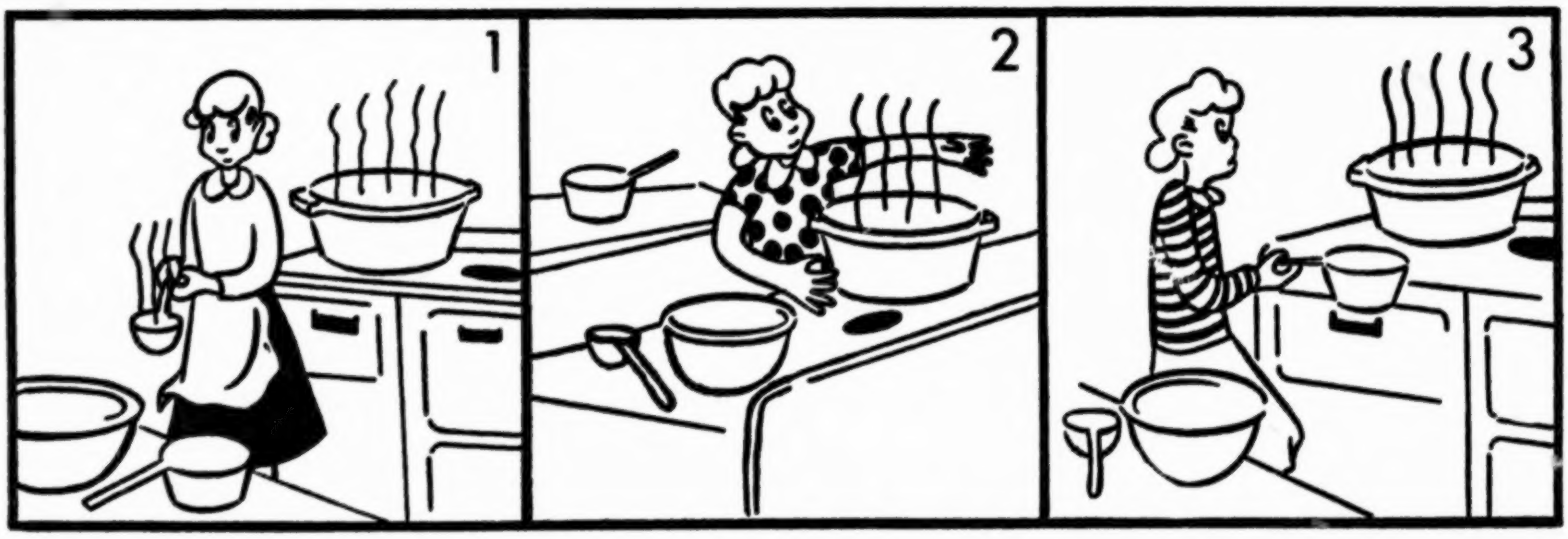

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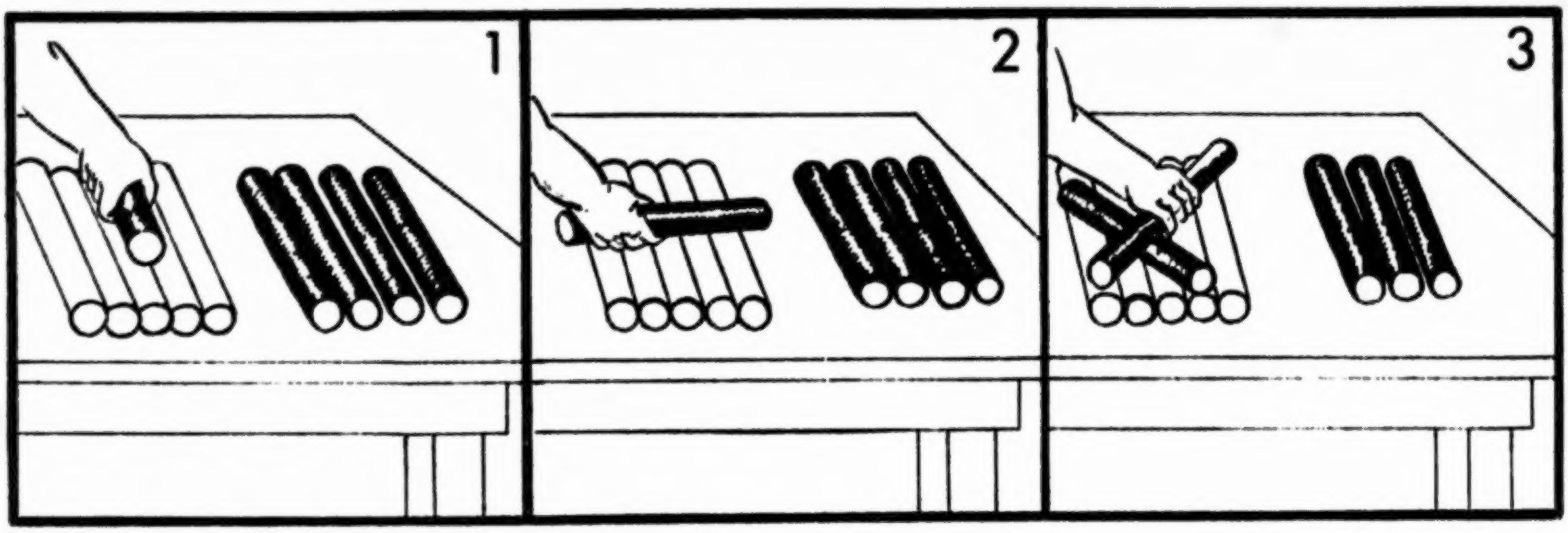

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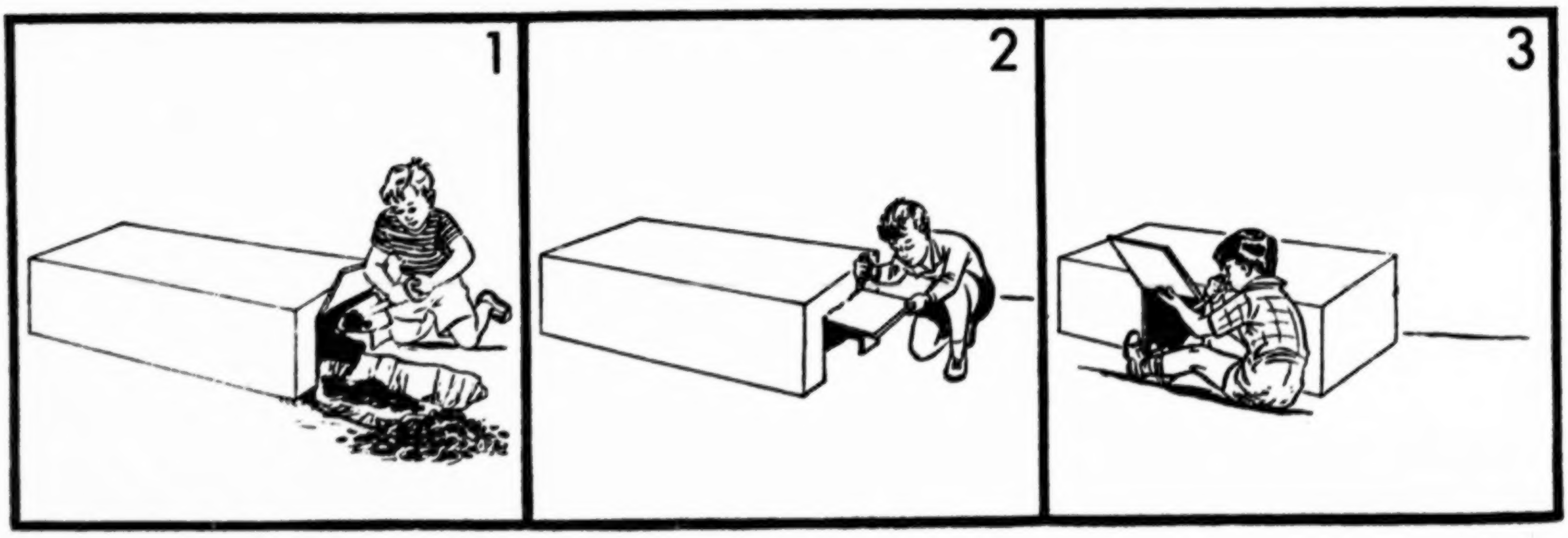

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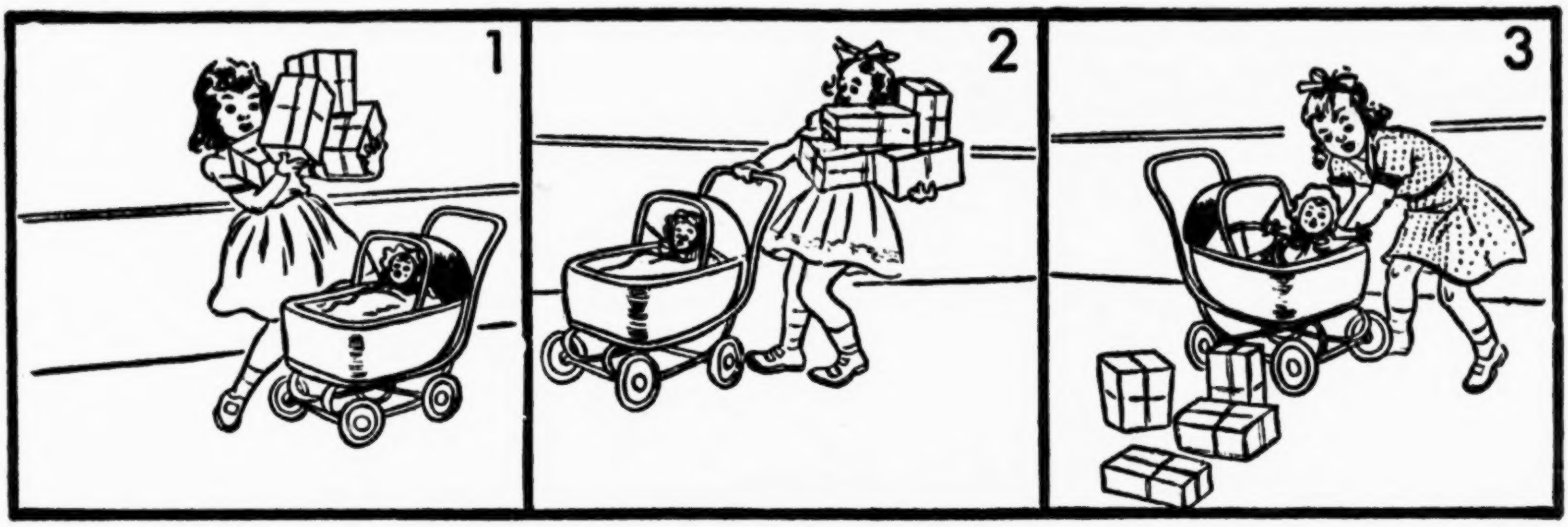

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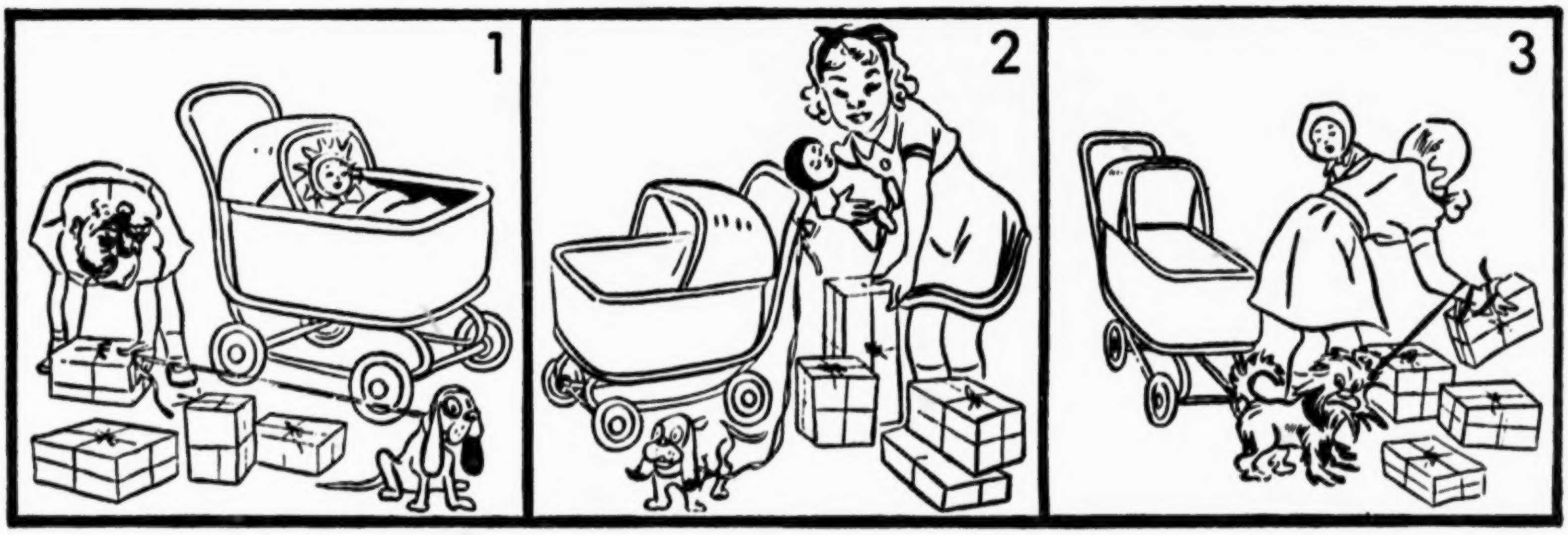

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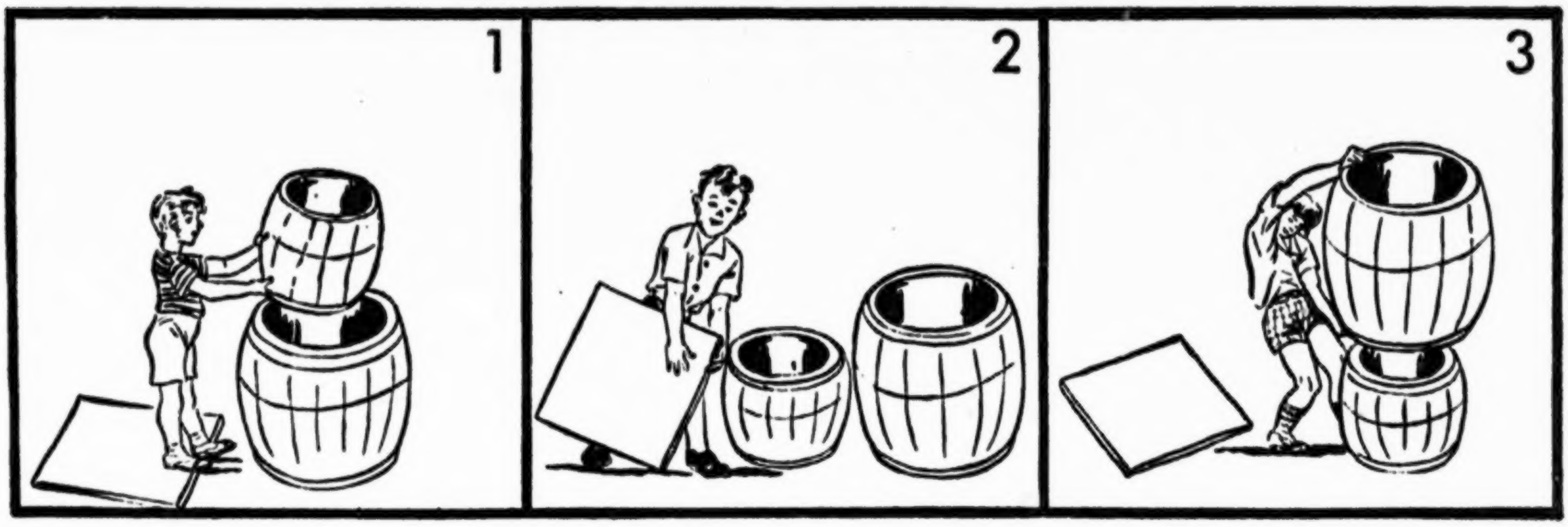

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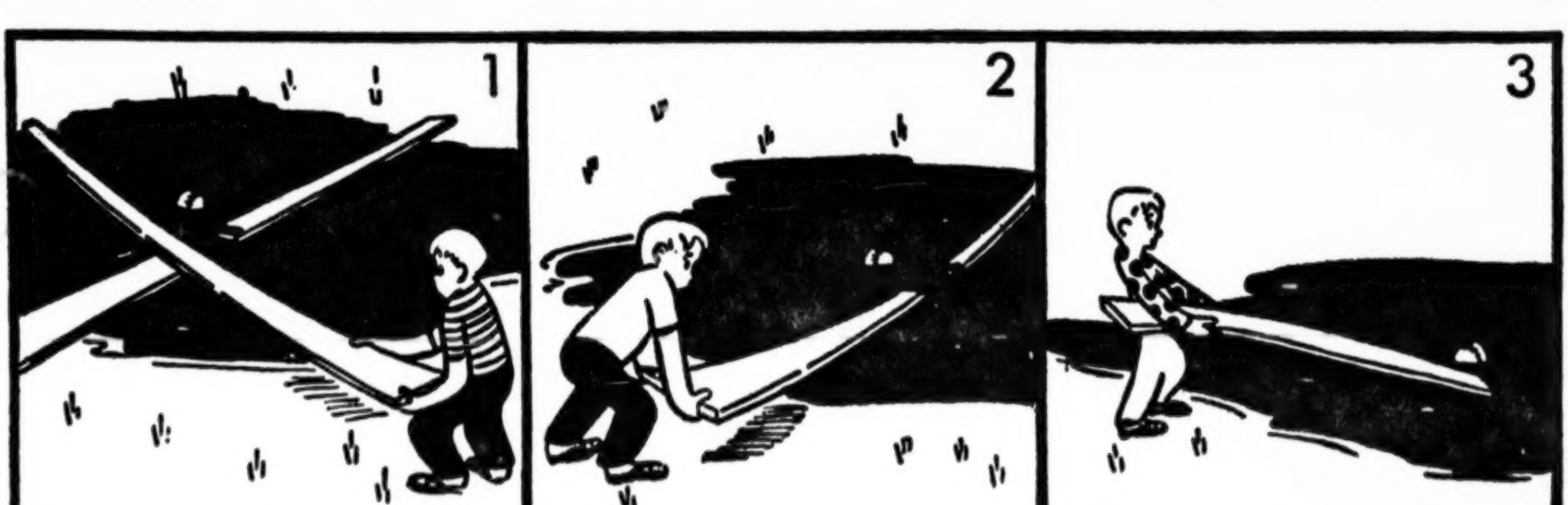

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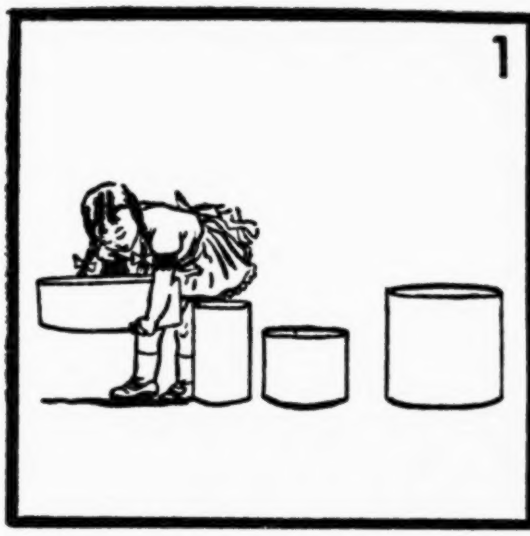

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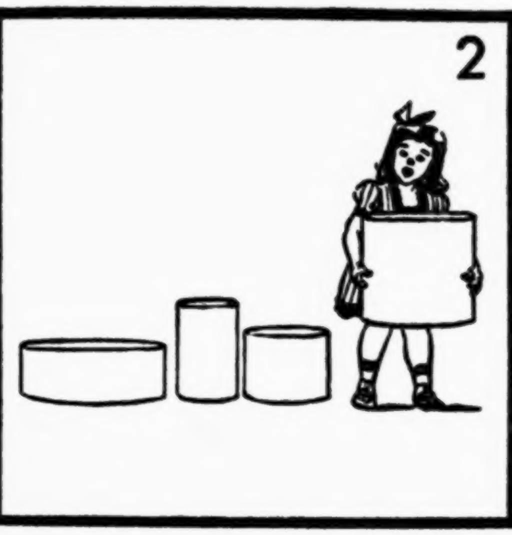

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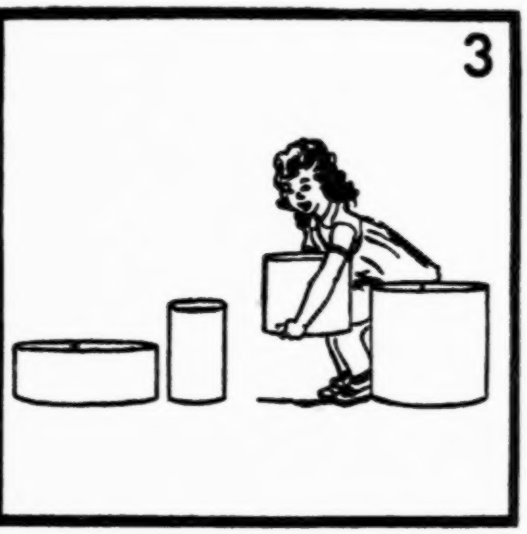

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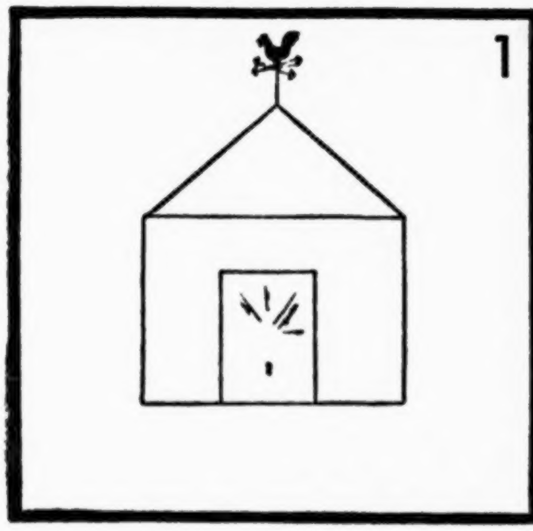

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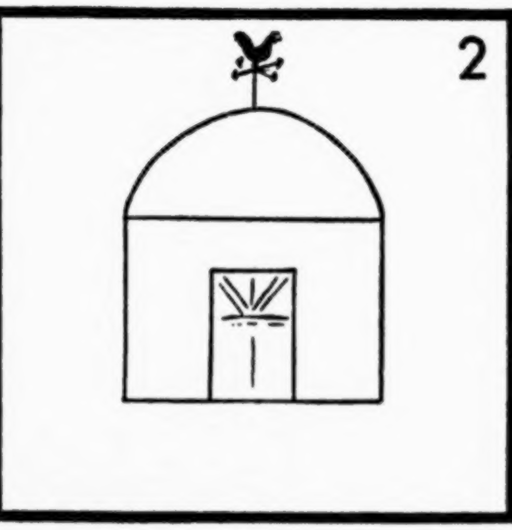

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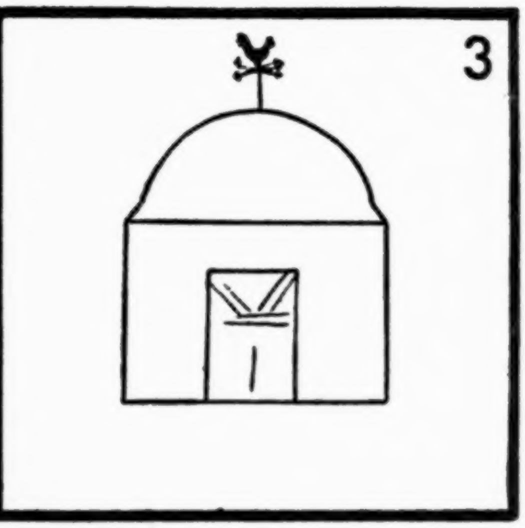

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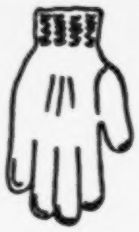

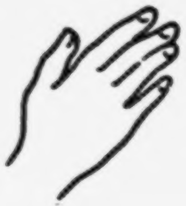

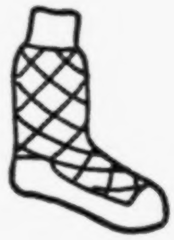

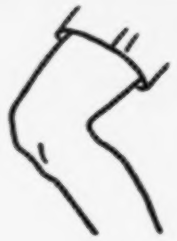

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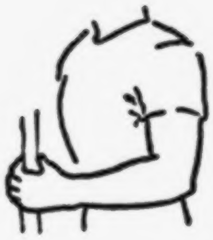

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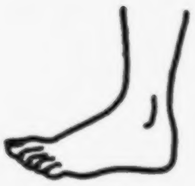

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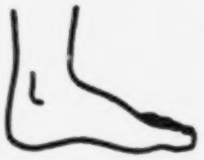

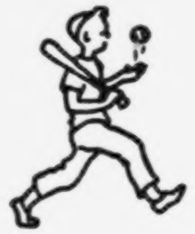

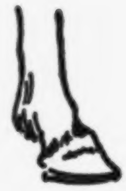

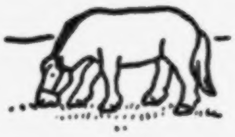

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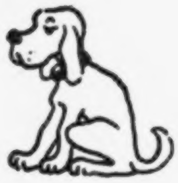

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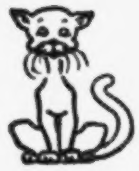

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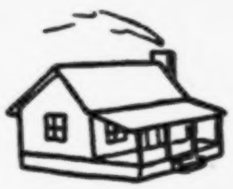

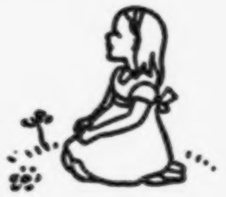

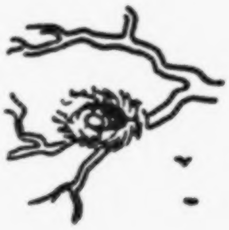

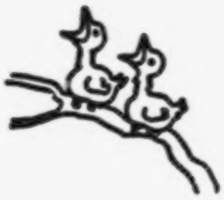

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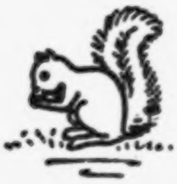

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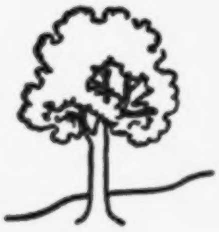

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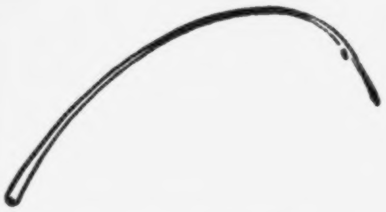

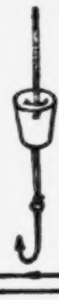

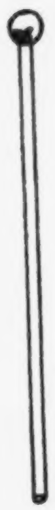

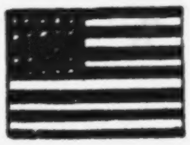

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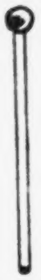

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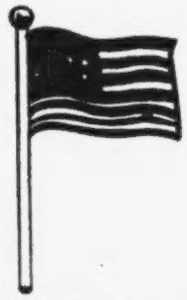

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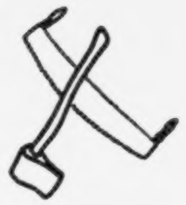

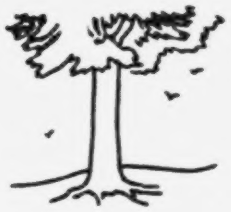

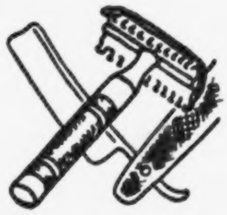

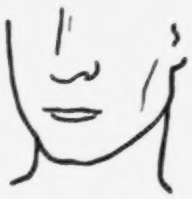

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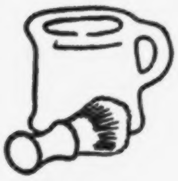

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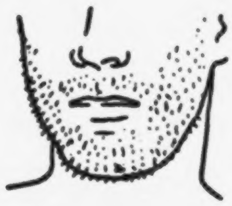

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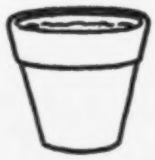

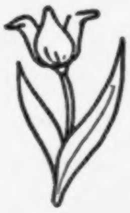

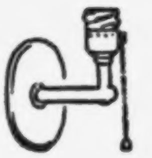

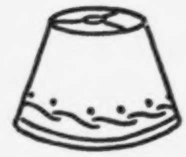

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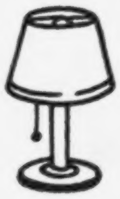

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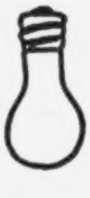

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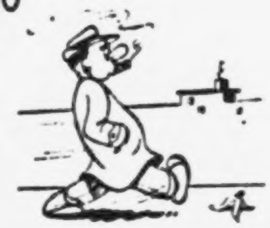

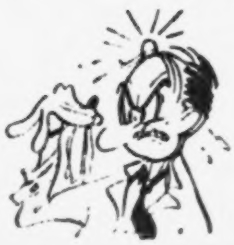

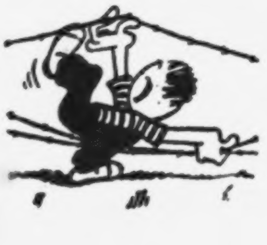

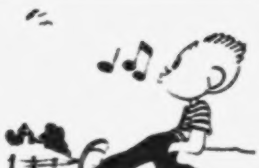

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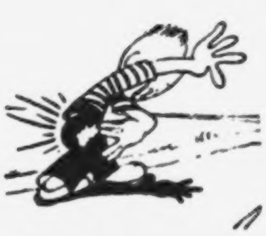

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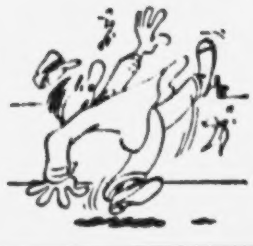

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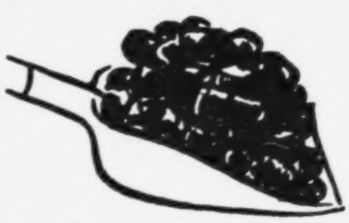

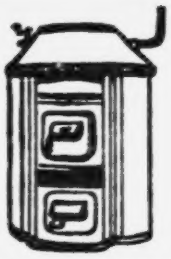

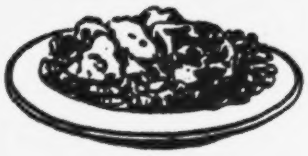

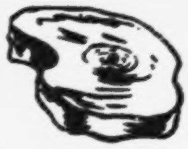

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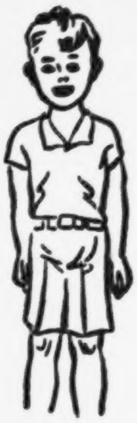

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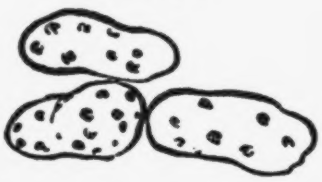

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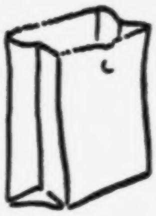

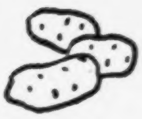

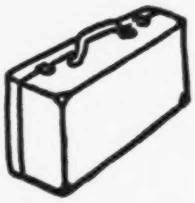

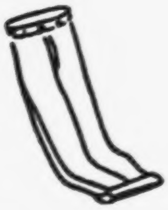

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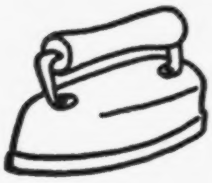

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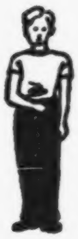

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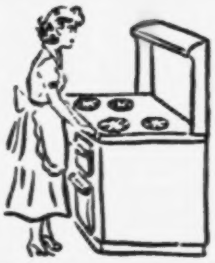

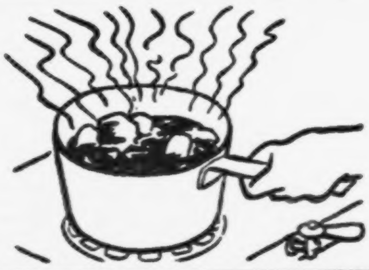

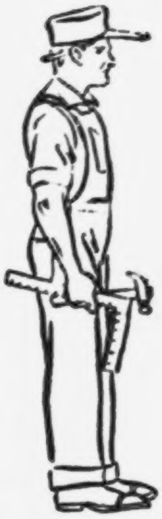

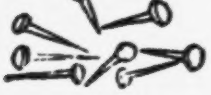

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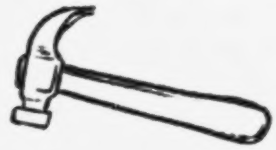

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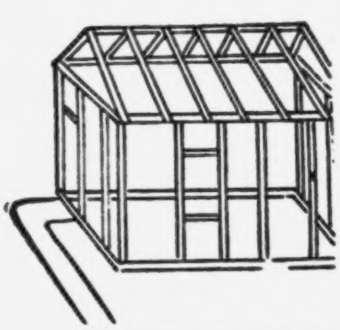

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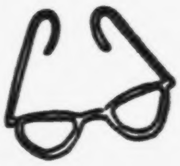

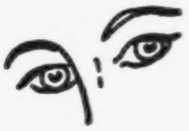

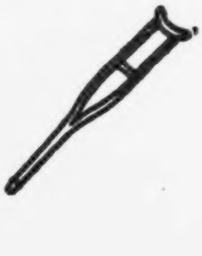

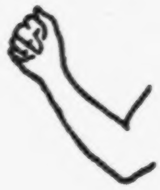

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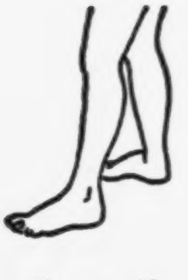

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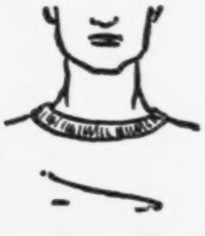

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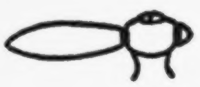

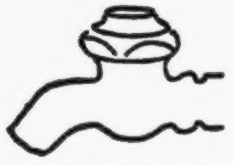

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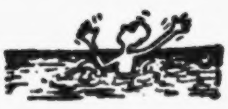

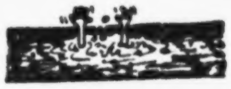

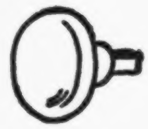

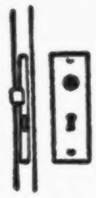

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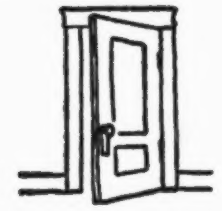

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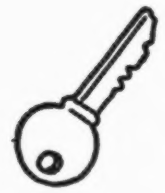

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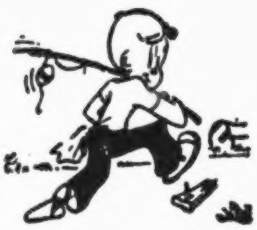

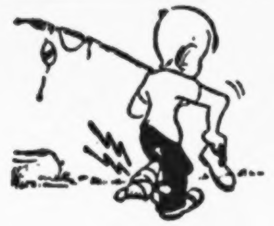

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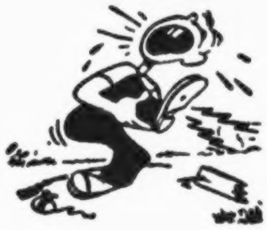

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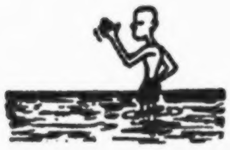

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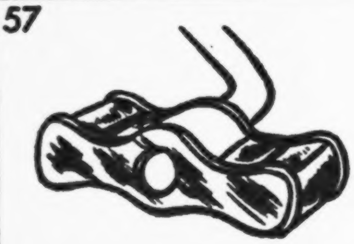

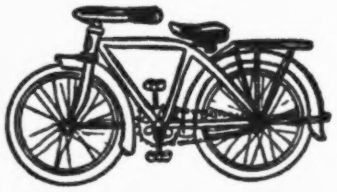

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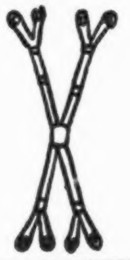

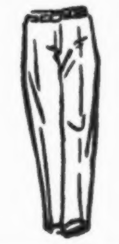

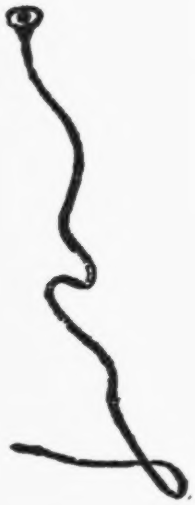

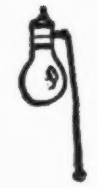

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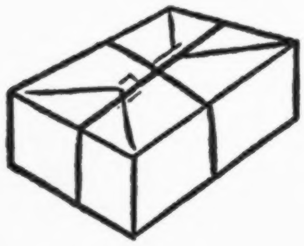

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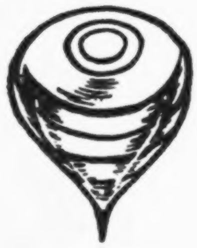

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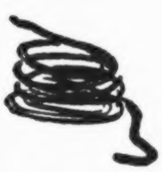

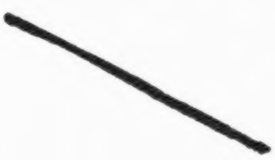

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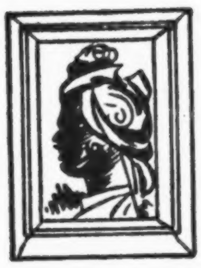

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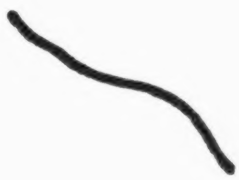

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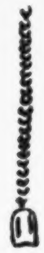

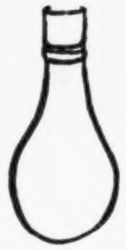

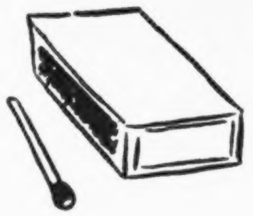

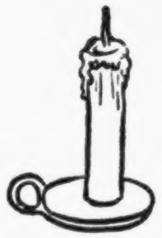

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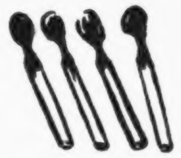

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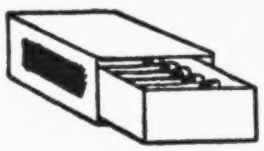

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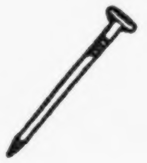

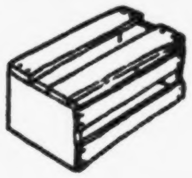

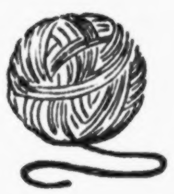

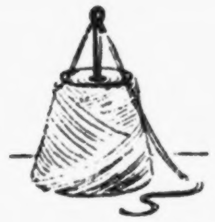

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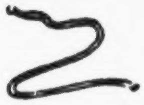

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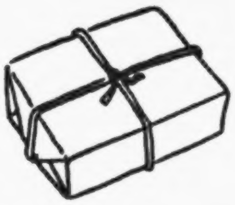

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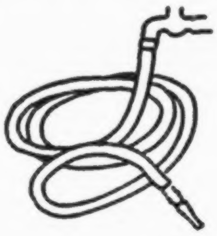

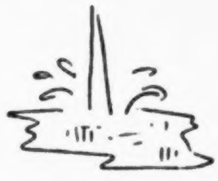

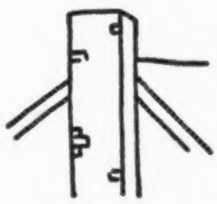

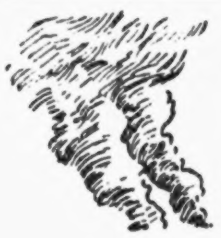

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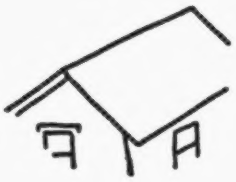

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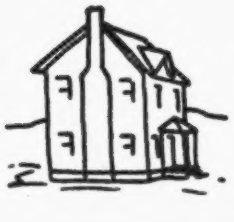

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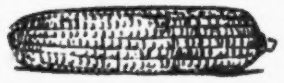

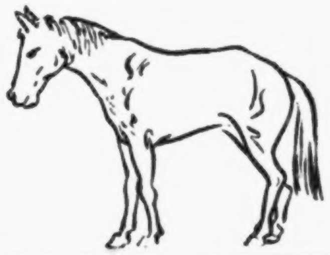

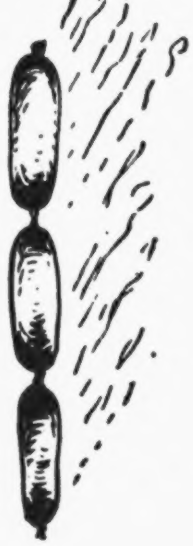

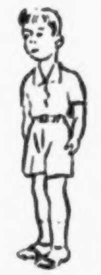

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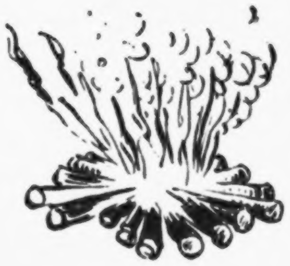

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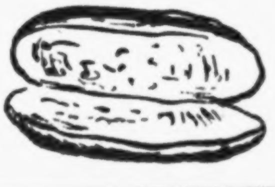

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SCHOOL................................ TODAY'S DATE................................

GRADE.......... AGE.......... .... BIRTH DATE................................

Years Months

Appendix B: Testing

LAIS: Adjusted Scoring for Pathways Subtest
SAT: Item Analysis

LAIS: Adjusted Scoring for Pathways Subtest

As mentioned in both Chapters three and four of the text, adjusted scoring for the Leiter Pathways subtest was devised so that if a subject accurately completed any portion of the section he was given credit as follows:

1. Parts I and II (scoring elements common to both). (a) The subjects were given credit for any terminals which were correctly joined. Scores thus reflected proportionable achievement rather than the zero score usually given when all terminals must be correctly joined. (b) If the subject joined various parts of the sequence correctly but omitted critical joinings of the segments, he was given credit only if he had joined a minimum of three numbers in any given portion. (c) If, in either Part I or Part II, a subject obviously had no notion of the task, he was not credited with accidental joinings.

2. Pathways, Part I. (a) A possible 25 points for correct joinings and 20 points in time bonuses was allowed on Part I. (b) If a subject joined all 25 numbers correctly, he was credited with a base score of 25 plus whatever time bonus was due.

3. Pathways, Part II. (a) A possible 24 points for correct joinings and 20 points in time bonuses was allowed on Part II. (b) If a subject joined all 24 numbers and letters correctly, he was credited with a base score of 24 plus whatever time bonus was due. (c) If the subject obviously had the idea of joining the letters and numbers alternately and in order he was given credit for the correct number of joinings in the modified scoring section even though he may have omitted one letter or number near the beginning and thus thrown the total sequence off.

SAT: Item Analysis

As scoring of both the Word Reading and Paragraph Meaning subtests of the SAT progressed it became apparent that certain items were consistently difficult for the adult illiterate population. Item analysis of these two subsections (Primary I Battery, Form X) revealed the ambiguous items presented in Table 49.

Table 49

Item Analysis of Ambiguities in Two SAT Subtests[a]

Subtest: Word Reading

Item No.	Ambiguous elements	Possible source of ambiguity
13	"ten" for "camp"	Tents in dialect might easily sound like "ten"
14	picture (cave)	Very difficult to distinguish
20	"stars" for "stairs"	Dialect differences
21	"deck" for "desk"	Dialect differences
24	"wool" for "wall"	Dialect differences
29	word "village"	Probably seldom if ever heard the word, let alone seen it.
31	"orchard" for "half"	Association of fruit with orchard probably seemed more logical than "Half" with the word pronounced "haff"
33	"swing" for "save"	Again, a difficult picture to distinguish. May have looked more like swimming than saving.

Subtest: Paragraph Meaning

Item No.	Ambiguous elements	Possible source of ambiguity
7	"wagon" for "car"	Adults might use terms "wagon" (stationwagon) and "car" interchangeably.

[a] Primary I Battery, Form X

Appendix C: Pre-service and In-service Training

Pre-service
In-service
Teacher Estimation of Time Allotments
Teacher Reactions

Appendix C: Pre-service and In-service Training

Pre-service

Invitations were issued to all adult basic education teachers in the Buffalo area to attend the three pre-service training meetings held in September, 1967. The purpose of these meetings was to acquaint the teachers with the objectives and materials of the project and offer as much experience as possible with the initial teaching alphabet, one of the teaching variables selected for the study. It was felt that by making the meetings available to all adult basic education teachers a service might be offered the Buffalo ABE program in three ways: (a) All of the teachers would be familiar with the program as the study progressed; (b) All teachers would be offered the opportunity to participate in the program if they so desired; (c) All ABE teachers would be introduced to i. t. a. as a possible vehicle for teaching adults to read.

The meetings were held as follows:

Thursday, Sept. 28,	7:00 - 10:00 PM
Friday, Sept. 29,	4:30 - 6:30 PM
Saturday, Sept. 30,	9:00 - 12:00 AM

Teachers were not told until the last day of the pre-service period that they would receive a stipend based on the number of meetings they had attended. (University credit was offered, in addition, to all teachers who ultimately participated in the program.)

The content of these meetings was arranged generally as follows:

1. Thursday, Sept. 28: Results of the 1966-67 testing program were given and explained. Comments were made by the project statistician as to the importance of following closely the research design. An outline was presented of methodological goals and an introduction was given to both the theory and specific application of the i. t. a. This was accomplished through film strip, discussion, and writing practice in i. t. a. letter formation. Time was provided for an examination of the Missouri Materials to be used as the basic materials in the study, pointing out their strengths and weaknesses as discovered during a pilot study conducted at SUNYAB the previous summer. This session closed with a question and answer period and a tape made the summer before.

2. Friday, Sept. 29: This second meeting was devoted to further reinforcement of the i. t. a. presentation of the previous day. Spelling rules were discussed as they applied to i. t. a. Then 45 minutes of directed practice in writing i. t. a. was followed by 15 minutes of oral reading from the i. t. a. text. Finally, with staff supervision, the teachers were asked to transliterate words and sentences from T. O. to i. t. a. Other materials pertinent to the teaching of reading were also provided.

3. Saturday, Sept. 30: At this final pre-service meeting time was again spent highlighting the main ideas of the Missouri Materials as well

as examining them in detail through demonstration and questions related to the first lesson.

Suggestions were given for enrichment activities and for possible variations on the lessons. Further practice was provided in writing i. t. a. After a summation, questions were answered and teacher interest in participating in the program was solicited through written ballot. Of the nine teachers who attended the meetings, eight indicated willingness to participate. The ninth teacher was unable to participate because her class did not qualify as reading below the 3.0 level. Class loads, teacher desire not to change teaching levels, and too broad a span of reading levels in classes were some of the problems which prevented the eventual participation of teachers who had indicated a willingness to be a part of the study. Four teachers were selected to teach the experimental groups. Later in the fall, because of changes in class enrollments, only three of the teachers so selected were able to participate.

In-service

In-service training was held at the Literacy Research Center at SUNYAB each week during the first semester and on a bi-weekly basis during the second semester. Since the adult basic education classes in which these teachers taught are held at night, the meetings were scheduled from 4:30-6:00 followed by a staff-prepared meal. In this way, besides giving extension to the meetings, the teachers were able to purchase a hot meal and still be on time for their 7 o'clock classes in downtown Buffalo.

The meetings were conducted by the Director, Research Associate, and, frequently, depending on the topics needing to be handled, two Research Assistants.

It is perhaps well to remember that the four variables considered in the methodological portion of the research were: (a) i. t. a.; (b) adult-oriented materials; (c) pacing of the instruction; and (d) teacher training. These variables were handled in different ways during the study with considerable overlap. For example, while the pre-service meetings were devoted almost exclusively to introduction to and practice in the use of the initial teaching alphabet, they would be considered teacher training. It was recognized that such overlap would make fine discrimination of variable power difficult, but in such a young field it was felt wiser to try and deal with several variables at once rather than zeroing in on one before its place in the whole context could be evaluated. Obviously the in-service meetings constituted a major portion of the teacher training variable.

Early in the semester much emphasis was given to questions concerning the initial teaching alphabet. As the teachers progressed in their ability to handle this new alphabet medium the emphasis of the meetings changed to adult-oriented materials. It was during this period that much adult-oriented material was produced by the staff to supplement the adult-oriented Missouri Materials. As each set of new materials was distributed the rationale for its inclusion was discussed. In all meetings record was made of where a class was reading, and, as pupil differences began to occur, more and more emphasis was placed on pacing and handling individual differences. Three times during the year teachers were asked to indicate their time allotments for the various subjects taught. (Results of this tally are included later in the Appendix.)

One of the biggest problems facing the adult basic educator is turnover in the classes. Since the classes are for the most part voluntary, the attrition and absence rate is sometimes as high as fifty percent within a given classroom. New students continually join the classes. Records on these students have to be maintained even though a student does not remain with the class very long. The meetings served as a clearing house for updating records--both of tests and attendance. (All tests during the second year of the study were administered by members of the research staff.)

One of the most important aspects of the in-service training was the opportunity for interaction between the research staff and the research teachers. From the standpoint of the staff the meetings provided an opportunity to discuss the strengths and weaknesses of an observation --hopefully of benefit to all the teachers rather than just the one teacher observed. Even more important, it provided an opportunity for the staff to listen to the teachers--to reactions to materials, methods, and students. This type of discussion, interspersed throughout the meetings and sometimes constituting a large portion of the meetings often provided the ideas from which the supplementary materials were constructed.

Teacher Estimation of Time Allotments

In October, January, and May, the three experimental teachers were asked to indicate the estimated number of minutes normally spent per class period in each of five activities. The results of this questionnaire are shown in Table 50.

Table 50
Teacher Estimation of Time Allotments in October, January, May

Type of Activity	Teachers								
	A			B			C		
	Oct.	Jan.	May	Oct.	Jan.	May	Oct.	Jan.	May
Directed reading	70	60	50	110	125	40	90	60	30/20
Individual help	15	50	35	--	--	60	15	50	20/30
At desk	5	15	--	10	10	5	--	15	10
Break (or lost)	15	25	20	10	15	15	25	30	30
Other arithmetic spelling other	45	--	45	20	--	15	20	--	15/0

Note.--Time allotments given by the teachers do not always add up to the 150 minutes available each night. However, they have been entered as given.

As may be noted in Table 50, the amount of individual help given to students increased as the year progressed. Teacher C found it necessary to split her students into two groups. Her distribution of class time between these groups is shown in the last column of the Table 50.

Teacher Reactions

At the May 15th in-service meeting the experimental teachers were asked to respond to three questionnaires: (a) What information do you have regarding student interests which might be of help in planning curriculum for next year; (b) Which of the five listed methods of instruction do you feel would be of most value to individual students in your class?; (c) What suggestions do you have as to how next year's program might be improved?

The responses to these questionnaires revealed:

All the teachers knew where most of their students were employed--if they were employed. Only one teacher was aware of other special interests and activities of her students.

All three teachers had suggestions as to which of the five methods could best meet the needs of individual students. In most cases this opinion reflected a desire to combine two or more methods of instruction for an individual. The five methods of instruction from which the teachers chose were programmed instruction, individualized reading, Missouri Materials--supplemented, language experience, combination.

Two teachers suggested a longer period for pre-service meetings. One teacher suggested that regular observation times be established with others available on request. Another requested more and longer observations. The third teacher suggested 30-minute observations.

It was unanimous that paginated materials should be compiled and distributed at the pre-service meetings rather than throughout the year.

Implications and recommendations from teacher reactions. Although most implications and recommendations from the Buffalo study are included in the body of this report, it may be in order to include some staff responses to the teacher reactions just presented.

1. Student interests: Teachers should be encouraged to acquaint themselves with student interests early in the year. They should be shown that such knowledge could direct them (the teachers) to bring in materials appropriate to student interests.

2. Methodology: Possibly teacher training could provide demonstration lessons (live or by video tape) in which several approaches to teaching reading to adults are presented. In this way the teacher could tailor instruction to the needs and background of the students as well as to personal inclination.

3. General suggestions for improvement of program: Ideally, pre-service might extend over a two-week period for demonstration lessons and reaction.

The possibility of fulfilling the request for more and longer observations certainly depends on the amount of supervisory staff available.

But the request itself points to the need and desire on the part of many ABE teachers for guidance. Observing in a room is always a delicate task and should be approached with utmost respect by the observer. When it is, the support rendered a teacher can be very valuable to both teacher and observer.

Response to request for regular observations: Unfortunately, the disadvantages of scheduled classroom observations far outweigh the advantages. If teachers knew when they were to be observed their natural tendency would be to prepare "according to the book" for the observation. This could result in two effects: (a) the scheduled observation period might tend to lose spontaneity, and techniques needing correction might never appear; (b) preparation for unobserved class periods might be neglected.

Appendix D: Materials

Control
Experimental
Materials Produced by Buffalo Research Staff
Sample Materials

Materials

Control. During the school year 1966-1967 while testing was being carried out in the different classrooms, 18 teachers were asked to describe the materials they were using. Nine teachers reported using a combination of adult- and child-oriented materials, five teachers reported using materials generally used by primary children, while four teachers listed adult-oriented materials as the texts used in their classes.

Experimental. For the research project the experimental teachers were supplied with Level I and Level II of the Missouri Materials developed as part of the Missouri Adult Vocational-Literacy Materials Development Project (Heding, et al, 1967). These materials (pp. 8 and 9 of which are included) were supplemented by 212 pages of supplementary materials developed by the Buffalo research staff. As explained in the body of this report these additional materials were developed to adapt the faster moving Missouri Materials to the needs of the very beginning student represented by the Buffalo sample. The following listing of materials will acquaint the reader with the scope of materials produced. Materials in the sections entitled "Comprehension," "Stories," "Visual Discrimination," and "Wider Reading" were original with the research staff. All songs were transliterated from their original T. O. version. All of the "Famous People" selections were adapted and transliterated from the New Readers' Press (Syracuse) Series *We Honor Them*. In the "Miscellaneous" section of the Readings all material was original with the staff except the two selections "A Salesman May Come to Your House Soon" and "Cost of Delivery." Both of these selections were adapted and transliterated from *News for You*, an ABE newspaper also produced by the New Readers' Press.

Materials produced by Buffalo research staff.

Item	Lesson No.	No. of pages	Total No. pages for section
Comprehension:	2 - 22	30	30
Stories:			61
Pre-lessons	A - J	10	
Stories	1-a - 1-f	6	
	2-a - 2-f	6	
	3-a - 3-f	6	
	4-a - 4-f	6	
	5-a - 5-f	6	
" To Work and School	a - d	4	
" The Bates at Home	a - d	4	
" After Supper	a - d	4	
" A Bus Ride	a - b	2	
" Sunday in the Country	a - b	2	
" The Farm	a - b	2	
" When Do We Eat?	a - b	3	
Visual Discrimination:			27
Letters	1 - 9	9	

Materials produced by Buffalo research staff (continued).

Item	Lesson No.	No. of pages	Total No. pages for section
Visual Discrimination (continuation):			
Words	I:A1 - A2:C2	6	
"	II:A - II:C	3	
"	III:A - III:C	3	
"	IV:A1 - IV:C2	6	
Wider Reading:	To accompany Lesson Number		25
"Out of Order"	13	3	
"The Farm"	14	2	
"The Chicken"	15	4	
"The Strike"	16	3	
"Big Talk"	17	4	
"It Takes Time"	19	2	
"Run for Your Life"	20	4	
"Wishing"	21	3	
Songs:			20
Swing Low, Sweet Chariot		1	
I've Been Working on the Railroad		2	
She'll Be Coming 'Round the Mountain		5	
Good Night Ladies		2	
Joshua Fit the Battle of Jericho		1	
Ezekiel Saw the Wheel		1	
Thanksgiving Hymn		1	
O Come All Ye Faithful		1	
Silent Night		1	
Joy To the World		1	
Gonna Build a Mountain		1	
Go Down, Moses		1	
Shortnin Bread		1	
He's Got the Whole World In His Hands		1	
Readings:			49
Bible			
Psalm 23		6	
Our Father		1	
Psalm 100		1	
Famous People			
Langston Hughes, Writer		2	
Roy Wilkins, NAACP Leader		2	
George W. Carver, Scientist		2	
Mary Bethune, Youth Worker		2	
Martin Luther King, Jr., Lover of Freedom		2	
Jesse Owens, Record Breaker		2	
Lorraine Lansberry, Author		2	
Duke Ellington, Musician		2	
Ethel Waters, Actress		2	
Sidney Poitier, Actor		2	

Materials produced by Buffalo research staff (continued).

Item	No. of pages	Total No. pages for section
Readings (continuation):		
Poems by Langston Hughes		
Simple's Poem on War	1	
Doing Better	2	
Mother to Son	2	
To Be Somebody	2	
Miscellaneous		
A Salesman May Come to Your House Soon	2	
Cost of Delivery	1	
Recipe for Chow-Chow	1	
Do You Remember?	1	
Careful Buying	6	
Riddles	1	
How Would You Say	2	
Overall total of pages		212

Sample materials. Each of the types of material used during the project is sampled in the section following. These samples include:

Missouri Materials--Lesson 7, pp. 8 and 9
Comprehension Exercises - Lesson 7
Stories - Story 5a (One of six such pages developed to accompany Lesson 7)
Visual Discrimination - #4 (letters)
- #I:C2 (words)
Wider Reading - to accompany Lesson 14
Songs - He's Got the Whole World in His Hands
Readings - Psalm 23 (p. 6)
- Careful Buying #1

the ried tω wurk

bill wurks hard aull dæ in the ʃhω factory. the factory iƨ in the sity but it iƨ tω mielƨ from the apartment bildiŋ. bill riedƨ tω wurk in a sity bus.

three men hω liv in the sæm apartment bildiŋ aƨ bill aulsœ wurk in the ʃhω factory. thæ wurk aull dæ in the factory. thæ ried tω wurk in the sæm bus aƨ bill. meny men ried tω wurk in this sity bus.

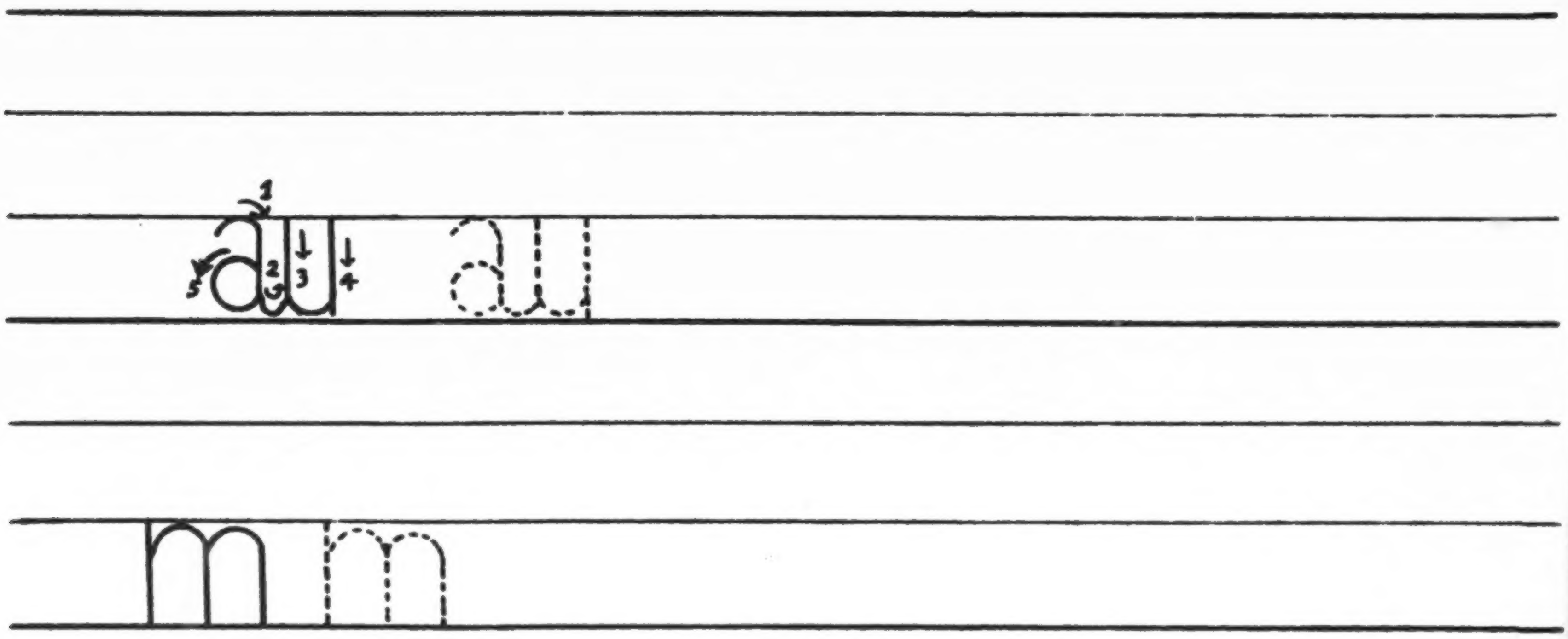
nue wurdƨ

but
it
mielƨ
tω

riedƨ
meny
bus

hω
sæm
aƨ

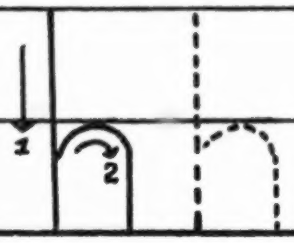
from
ried
men

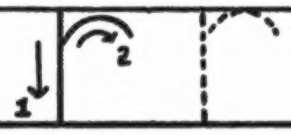


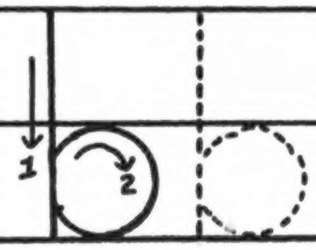
The Ride to Work

Bill works hard all day in the shoe factory. The factory is in the city but it is two miles from the apartment building. Bill rides to work in a city bus.

Three men who live in the same apartment building as Bill also work in the shoe factory. They work all day in the factory. They ride to work in the same bus as Bill. Many men ride to work in this city bus.







COMPREHENSION
Lesson 6

Riet t for trω and f for fauls

1. bill wurks hard aull dæ. ____

2. Mæry wurks in a bus factory. __

3. Meny men ried tω wurk in
a bus. ____

4. the factory iz three mielz
from the apartment. ____

5. three men ried in the sæm
ʃhω az bill. ____

Story 5-a

bill and thrϵϵ men from the apartment bildiŋ ried tω wurk. thæ ried tω wurk in a sity bus. the bus gœz tω the ʃω factory. thæ wurk hard in the ʃω factory.

Name: ____________________ Date: __________

Visual Discrimination #4

1.	æ	œ	ie	ue	æ	ϵϵ
2.	ϵϵ	œ	ϵϵ	æ	ue	ie
3.	ie	ϵϵ	œ	ue	ie	æ
4.	œ	æ	ie	œ	ϵϵ	ue
5.	ue	œ	ϵϵ	æ	ie	ue
6.	ϵϵ	ϵϵ	æ	œ	ue	ie
7.	æ	œ	æ	ie	ϵϵ	ue
8.	ue	ie	æ	ue	œ	ϵϵ

LESSON I: C2

NAME: ______________________________ DATE: ________________

1.	wonts	wants	wæts	wills	wonts	wuef
2.	reed	ræd	reed	ræt	rœd	riet
3.	spell	spœk	speek	spill	spun	spell
4.	and	ant	alt	and	am	at
5.	iƨ	iƨ	it	in	iz	if
6.	bæts	boet	bank	bæt	bæts	bæl
7.	ɑ	e	ɑ	i	œ	au
8.	reed	ried	rœd	rωt	rωd	reed

wiedeɼ ɼeediŋ for lesson forteen
"the farm"

mie frend had a garaʒ bilt for him. the baŋk gæv him $200 mor than hee needed for the garaʒ. hee woz gœiŋ tω cash the check tω pæ the bildeɼ, but hee cωd not get tω the baŋk in tiem. sœ the bildeɼ sed, "giv mee the check and ie will cash it for yω. ie will giv yω an ie.œ.ue. for the $200. that iz whot mie frend did.

tω weeks went bie and hee did not get hiz $200. hee cauld the man and askt for hiz muny. the man sed, "ie will send it tω yω." mie frend wæted tω mor weeks, but nœ muny cæm. hee cauld agen, and agen hee got the sæm story.

Wiedeʌ rεεdiŋ for lesson fortεεn
"ɧe farm" - Þæj

Mie frend caɯlld arɷnd and leʌnd ɧat ɧe bildeʌ did ɧis tω pεεpl a lot. hεε caɯlld ɧe man agen and sed hεε wωd tæk him tω cort. ɧe man sed hεε did not cær.

ɧen mie frend got a gωd iedεεu. hεε caɯlld ɧe nuεzpæpeʌ and tœld ɧem. ɧe nuεzpæpeʌ caɯlld ɧe man and sed ɧæ wωd put ɧe story in ɧe pæpeʌ if ɧe man did not pæ. ɧat did it! tω dæz læteʌ mie frend got $100, and a wεεk læteʌ hεε got ɧe rest ov hiz muny.

Songs

hee's got the hœl wuɹld in his handz

hee'z got the hœl wuɹld in his handz,
hee'z got the hœl wied wuɹld in his handz,
hee'z got the hœl wuɹld in his handz,
hee'z got the hœl wuɹld in his handz.

hee'z got yoo and mee bruthɛɹ in his handz,
hee'z got yoo and mee sisteɹ in his handz,
hee'z got yoo and mee bruthɛɹ in his handz,
hee'z got the hœl wuɹld in his handz.

hee'z got the littl bitty bæby in his handz,
hee'z got the littl bitty bæby in his handz,
hee'z got the littl bitty bæby in hiz handz,
hee'z got the hœl wuɹld in his handz.

hee'z got everybody heer in his handz,
hee'z got everybody heer in his handz,
hee'z got everybody heer in his handz,
hee'z got the hœl wuɹld in his handz.

Salm 23:6

ʃhuerly gωdness and
mersy ʃhall folloe mee
aull the dæz
ov mie lief:
and ie will dwell
in the hous ov the lord
forever.

Cærful bieiŋ - 1 readings

product	brand næm	kwantity	cost
butteʀ	land u læks	paund (lb.)	69¢
butteʀ	orchard park	paund (lb.)	69¢

1. whot iz the næm ov the fiʀst ietem? __________

2. whot iz the næm ov the second ietem? __________

3. whot iz the product?
   - mœt ☐
   - eggz ☐
   - butteʀ ☐

4. ar bœth products the sæm kwantity?
   - yes ☐
   - nœ ☐

5. iz the cost the sæm?
   - yes ☐
   - nœ ☐

6. whot iz the œnly diffeʀens betwœn the tω products?
   - brand næm ☐
   - kwantity ☐
   - cost ☐

Appendix E: Miscellaneous

EI: Book Titles Arranged by Category
Additional Tables

EI: Book Titles Arranged by Category

Category 1: Children, Animals and Humor

King of Horses
A Surprise for Dick and Jane
The Witch in the Forest
Jokes and Funny Stories
The Duck That Could Not Fly
Puff Gets Lost
Animals I Like
My Funniest Moments
The Horse Who Couldn't Bark
Tom and Jane Help Father

Category 2: Sociology, History and Civics

Our Next President
Bombs, Bullets and Bread
These Are Your Rights
The Story of World War II
Up From the South
Lincoln, Man of Peace
March for Freedom
Soldiers for Peace
Our Greatest President
The Fight for Freedom

Category 3: Family and Self-improvement, Jobs and Health

A Job I Liked
How to Raise Children
How to Have a Happy Home
How to Eat Better
Better Health and Longer Life
100 Ways to Make Money
Ways to Improve Your Appearance
Learn to Fix TV Sets
How to Have a House of Beauty
Train Yourself for a Better Job

Category 4: Religion

Being a Better Christian
The Life of Jesus
Heroes of the Old Testament
Stories of the Bible
The Beloved Disciple
Jesus and the Woman at the Well
Missionaries Paul and Silas
The Ladder to Heaven
When Adam Walked With God
The Story of the Cross

EI: Book Titles Arranged by Category (continued)

Category 5: Sports, Adventure and Travel

Let's Go To Hawaii
Hunting Stories
Lost in a Cave
The Winning Team
Fishing Tales
Football Champs
Dead Man's Treasure
Touchdown
Floating Down the Mississippi
Our Trip to Canada

Category 6: Science

A Trip in Space
What Makes It Rain
Fun With Numbers
The Story of the Stars
Science and You
Experiments With Electricity
How the Weather is Changing
The Dinosaur Book
How Science Saves Lives
Life in the Ocean

Table 51
Experience Inventory: Book Titles
More Frequently Chosen Titles

Percentage of choice	Title	Category
54	A Trip in Space	6
59	When Adam Walked With God	4
59	Experiments With Electricity	6
60	Missionaries Paul and Silas	4
64	What Makes it Rain	6
66	The Story of the Cross	4
66	The Story of World War II	2
66	Ways to Improve Your Appearance	3
68	The Fight For Freedom	2
70	Jesus and the Woman at the Well	4
75	100 Ways to Make Money	3
76	Let's Go to Hawaii	5
76	Football Champs	5
77	How to Have a Happy Home	6
80	The Life of Jesus	4
84	Science and You	6
86	Our Next President	2
86	How to Have a House of Beauty	3
87	Our Trip to Canada	5
87	The Beloved Disciple	4
89	How To Raise Children	3
90	A Job I Liked	3
91	How to Eat Better	3
91	The Ladder to Heaven	4
91	Lincoln, Man of Peace	2
93	Our Greatest President	2
94	Better Health and Longer Life	3
94	Stories of the Bible	4
97	Being a Better Christian	4
97	Train Yourself for a Better Job	3

Table 52
Experience Inventory: Book Titles
Less Frequently Chosen Titles

Percentage of choice	Title	Category
3	The Witch in the Forest	1
3	The Dinosaur Book	6
6	The Winning Team	5
6	Fun With Numbers	6
7	Dead Man's Treasure	5
7	Floating Down the Mississippi	5
9	Puff Gets Lost	1
9	Lost in a Cave	5
10	A Surprise for Dick and Jane	1
11	Bombs, Bullets, and Bread	2
12	My Funniest Moments	1
13	King of Horses	1
13	Life in the Ocean	6
14	Touchdown	5
16	Fishing Tales	5
19	These are Your Rights	2
23	Jokes and Funny Stories	1
23	Heroes of the Old Testament	4
24	The Horse Who Couldn't Bark	1
25	Animals I Like	1
30	Soldiers for Peace	2
32	How the Weather is Changing	6
33	The Story of the Stars	6
34	March for Freedom	2
34	Hunting Stories	5
35	Up From the South	2
40	Tom and Jane Help Father	1
40	Learn to Fix TV Sets	3
41	How Science Saves Lives	6
45	The Duck That Could Not Fly	1

Table 53
Number of Years Subjects Have Lived in the Buffalo Area

No. Yrs.	Number of Years Subjects Have Lived in the Buffalo Area												
	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-20	Over 20	No Resp.	Total
N	4	12	10	9	14	13	20	14	6	18	53	35	208

Note.--EI question on which these data are based: "How long have you lived in this area?"

Table 54
Subjects' Reports of Previous School Attendance in Percentages

Grade Level Attained in Previous School Attendance	Subjects (N = 174)		
	% of Men	% of Women	Combined Percent
0	14	16	15
1	27	20	20
2	12	9	9
3	18	16	14
4	9	10	8
5	14	13	11
6	5	11	7
7	4	11	6
8	9	4	6
9 or above	3	6	3

APPENDIX D.--ERIC REPORT RESUME

ERIC REPORT RESUME

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10-1-68

A LITERACY PROGRAM FOR ADULT CITY CORE ILLITERATES: (I) AN INVESTIGATION OF
PERIENTIAL FACTORS PERTINENT TO READING INSTRUCTION, (II) THE DEVELOPMENT OF
INSTRUMENT TO PREDICT SUCCESS IN LEARNING TO READ, AND (III) A STUDY OF THE
INITIAL TEACHING ALPHABET AS A TEACHING METHOD FOR ADULT CITY CORE ILLITERAT
(Final Report)

Brown, Don A. and Newman, Anabel P.

State University of New York at Buffalo, Fac.Ed.Studs.

I - 10-68 U.S.O.E. 6-1136 (OEG-1-7-061136-0385)

This is a study of (a) educational characteristics, (b) methodology, and (c) predictive variables in adult literacy. The 207 subjects averaged 47 years old, with a mean residence in Buffalo of 17 years, of rural Southeastern non-reading background, wanting to learn to read for utilitarian reasons.

In general, they had a television, radio, and telephone, but owned no car or home. They knew most time measures, and handedness, but knew little about maps and orientation.

Reading interests included personal and family improvement, health, and religion, moderate interest in history, government, and current sociology, with little interest in children's fantasy, humor, animal stories, sports, adventure, and travel.

Though differences were not significant, subjects did slightly better on the experimental method, which used i.t.a. with material of adult interest, paced for adults, and with teacher training, than in the control classes on the basis of standardized reading tests.

Some variables in the WAIS, Leiter Adult Intelligence Scale, Davis-Eells Games, and Experience Inventory correlated .20 to .30 with reading gain. A multiple correlation of .32 was obtained from seven variables.

Seventeen specific recommendations are included.

ERIC Clearinghouse
MAR 18 1969
on Adult Education

PROCESSING CONTROL RECORD

for

MUST and MUST - EXPEDITE DOCUMENTS

ERIC FACILITY

Document Identification Number BR-6-1136

Date Received from Central ERIC MAR 10 1969

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